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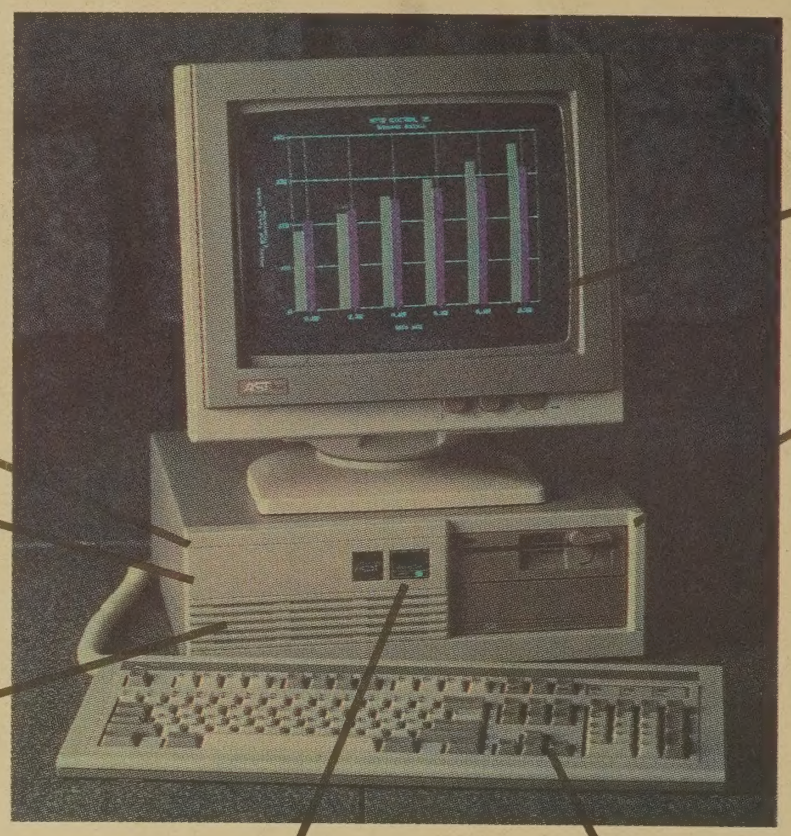

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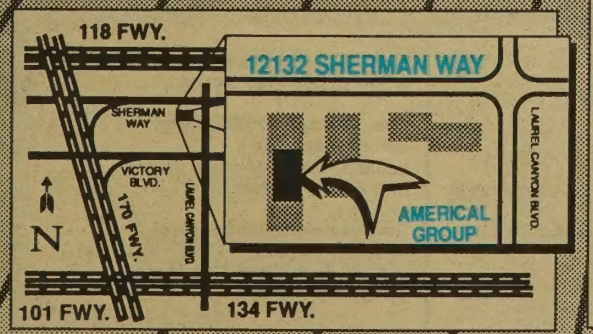

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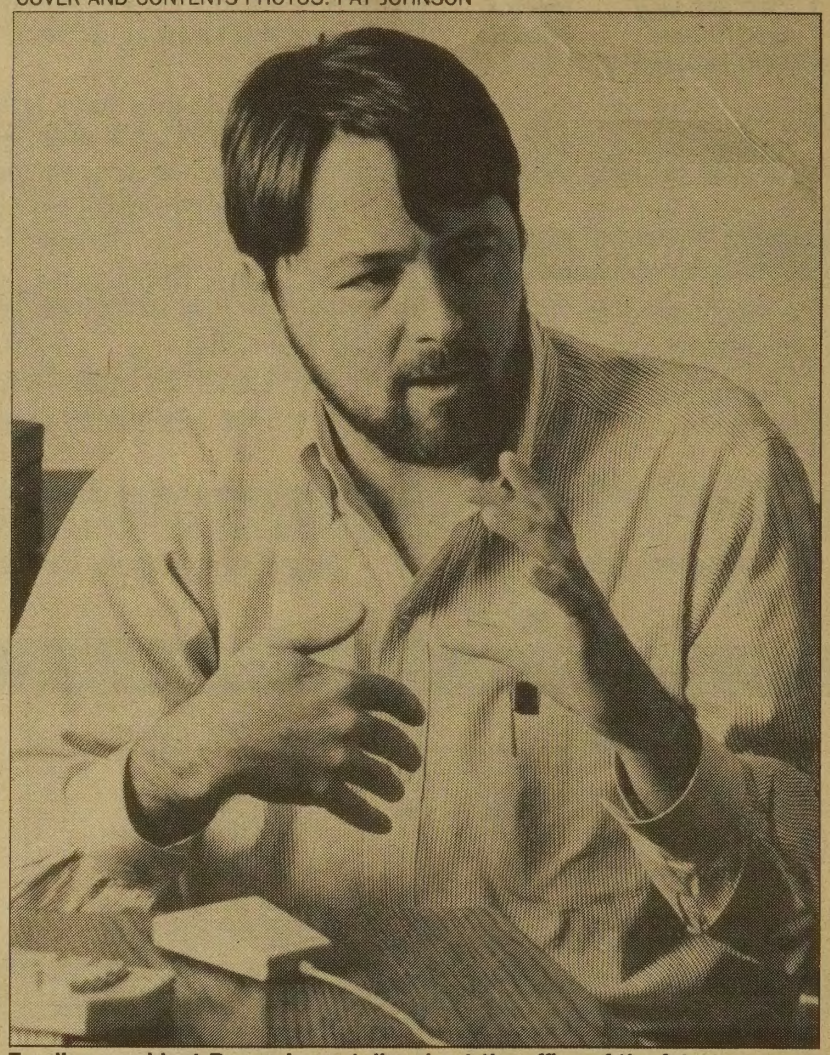

Farallon president Reese Jones talks about the office of the future.

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Regis McKenna On The Post-IBM World
By Mary Eisenhart
Marketing wizard, industry observer extraordinaire, and general high-tech mover and shaker Regis McKenna on changing—and increasingly diverse—market opportunities and why they're happening.

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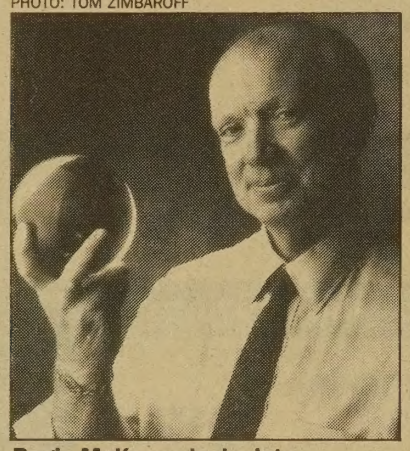

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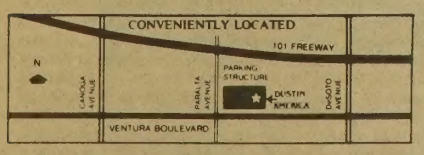

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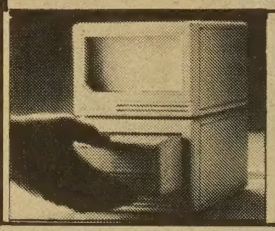

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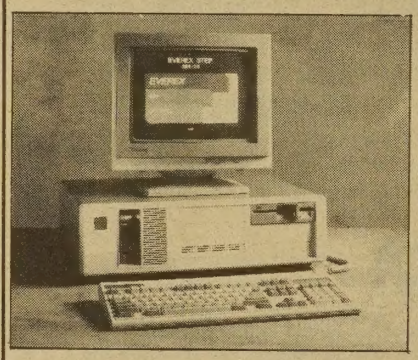

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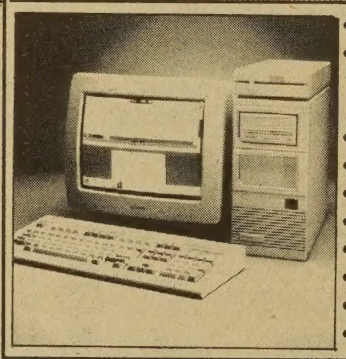

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LETTERS

Freedom Of Speech?

The analogy that Brock N. Meeks draws between free speech issues in shopping malls and computer conferencing services ["Free Speech Is Where You Find It," Issue #56, May 1989] is correct. The conclusion he draws, that court decisions upholding the right of property owners to limit individual expression on their property are an encroachment on freedom of speech, is absurd. Our founding fathers very wisely prevented the government from interfering with the people's expression. The government may not restrict freedom of speech on public or one's own private property.

Property owners' rights are also protected by the Constitution and have their roots in English Common Law. A property owner may allow public access to his property for certain purposes (e.g., to shop or communicate electronically on certain topics). By doing so, the property owner does not abrogate his right to control which activities occur on his property. Otherwise shopping malls would be open to any type of public demonstration, not just petition signature-gathering—and BBSes could be taken over by individuals wishing to propagate revisionist history.

The difference between revisionist history and revisionist law (which Mr. Meeks advocates) is that events have occurred and cannot be altered. The Law, in this country, is ultimately what the Supreme Court says it is.

Finally, in regard to countries like Afghanistan, which have stripped their citizens of human rights, I would like to point out that among the rights totalitarian governments trample are property rights (they are usually among the first to go). If Mr. Meeks would like to see a computer conferencing system where unlimited expression was allowed (which I think is a great idea), he should start his own BBS.

Jack Fox
Walnut Creek

Viruses—A Communist Plot?

I greatly enjoyed your February 20 issue dealing with computer viruses. It took a sober and informative look at the history of these beasts and speculated on their future. But Bill Copenhaven's letter in your May 15 issue, railing against computer viruses as some kind of communist-inspired terrorist plot, provoked howls of laughter in our office. His knee-jerk response to the problem of virus infection obscures the issue and blows the problem well out of proportion. Computer viruses could indeed be formidable weapons, but—let's be serious—nowhere near as destructive as the poison gas or nuclear warheads to which Mr. Copenhaven compares them.

Copenhaven completely ignores the beneficial effects of viruses. One immediate positive result of viruses is better computer security (not to mention handsome profits to the companies that sell backup devices and virus-protection software). What else would have prompted ARPANET to plug its security holes if not the celebrated virus? How long had NASA's computer system been vulnerable to sabotage and theft before a West German computer club demonstrated the problems inherent in its security system? Face it: lax sector is a sign of bad programming. Furthermore, anyone too lazy to make backups of their data is just asking for trouble; hard disks crash all the time without the aid of viruses.

How long had NASA's computer system been vulnerable to sabotage and theft before a West German computer club demonstrated the problems inherent in its security system? Face it: lax sector is a sign of bad programming.

I even have a theory that there are viruses floating around out there in many commercial software packages just waiting to be activated. Say a software publisher is worried about piracy of his/her product. The publisher could tell a programmer to write a malevolent subroutine into the product that would install itself in the hard drive of a pirate's computer once the diskette had been copied more than a reasonable number of times, "reasonable" being the generation of perhaps four or five backups.

And honestly, much of the data in our information-glutted world is, in the long run, fairly useless. Sure, there is "important" data in mainframes and minis in commercial use (usually billing and payroll records) as well as in government databanks. Does Mr. Copenhaven know how much information the government (i.e., the DMV, IRS, FBI, CIA, and NSA) keeps in a file under his social security number? But micros are another matter. If the micros in my office were to get an infection, most of the data that would be lost would consist of nothing more important than administrative memos, minutes of meetings, reports, budget projections, and personnel records, all of which exist in hardcopy files. And since we make weekly backups, all of this garbage is easily recoverable.

Computer viruses are a logical, and not entirely unexpected, consequence of the phenomenal growth of the industry. I read John Brunner's *Shockwave Rider* when I was in junior high school in the early '70s before I knew what a byte was and well before the personal computer industry was even on the runway, much less off the ground. We have seen this coming and have had plenty of time to prepare for it.

Mr. Copenhaven asserts that "The acceptance of viruses as a necessary stage in the evolution of computers is...another sure step in the path toward a new dark age." On the contrary, I feel that thrusting one's head in the sand to await the end of civilization as we know it is a pretty ineffective way of preventing such a disaster. Understanding viruses and how they operate is the key to overcoming them and learning to modify their behavior to benefit the computer user. Civilization has found ways to turn yeast into beer and bread; medicine has found ways to turn bacteria, bread molds, and biological viruses into antibiotics and vaccines. Surely the computer industry can find ways to turn tapeworms into useful programs.

Let Mr. Copenhaven string garlic around his neck and carry a gold cross to ward off vampire viruses. I'd rather make friends with one and try to housebreak it for my own purposes.

Terry L. Floyd
San Leandro

Shareware: Still A Few Bugs In The System

Reading what Bob Wallace of Quicksoft [Issue #56, May 1989] had to say about shareware and keeping the customers satisfied reminded me of a few letters directed to shareware individuals that I still have not yet received replies from. In these particular letters, I specifically requested answers to some questions regarding their shareware programs.

With one program, I mailed a blank disk and return postage, as directed on the shareware disk, for additional programming that was not on the disk. No money was required for this request. Two months later, I have not received anything back, disk or letter.

On another shareware program, I do not have a use for it at this time, but I needed some additional information that would enable me to make use of it at a later date. I sent a letter asking some questions about the program. One month has passed—still no reply.

To sum it up: on every shareware disk I have acquired, when I sent a letter to the author with a question or two, none of them has has the courtesy to reply. Since my letters were not returned to me, they must have reached their destination.

Some of the shareware disks I have are dated as far back as 1984. Perhaps these authors are no longer in the business, and therefore ignore any correspondence received.

So why send money to a source that does not reply to an inquiry? True, some of them may have died, but can my luck be so bad that I picked all the

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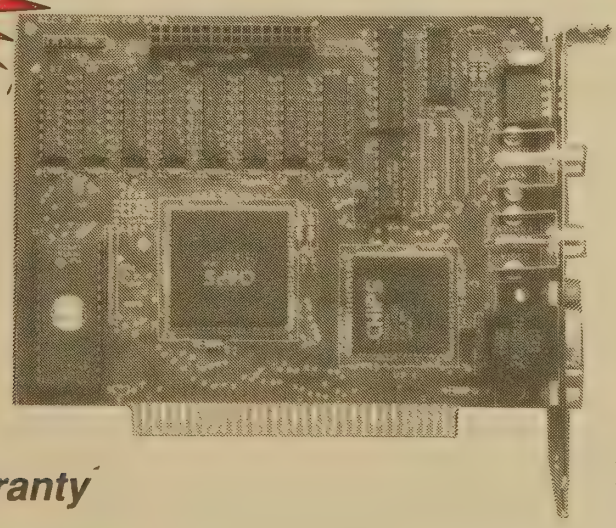

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LETTERS *continued*

dead ones to write to? I doubt it.

Cyrus Gordon
Oakland

By way of a sorry update on the saga of *ICONVERT* by John Michalski of Infinity Engineering [*Mr. Schweid read about this program in an article about converting Mac and PC graphics, downloaded it from a BBS, and sent in a $50 registration fee for enhanced software and documentation. He received no reply to this or to repeated subsequent inquiries.—eds.*], I wanted to let you know how things were not progressing.

As you remember, your staff located a phone number for me for Mr. Michalski. As I mentioned to you, I called him on April 17, 1989, explaining the entire disaster. He said he had not seen any of my letters, did not know of my problem, requests, or demands. He asked if I wanted another diskette or a refund. I told him that based on this experience I would rather have a refund. He said he would send me a check.

Since I have received nothing as of today [June 4], I called Michalski collect this morning. The phone number has been disconnected.

I am sending a package regarding my problems with this author to the Shareware Ombudsman as well. Although my $50 may be lost, I would appreciate anything your journal can do to get the word out.

Gary Schweid
Millbrae

Despite the diligent efforts of shareware authors, most of whom are highly conscientious and responsible, stories like this continue to surface.

While there is no panacea, there are a couple of things prospective customers can do to protect themselves. If the program carries the message that it's produced by a member of the Association of Shareware Professionals, you have reasonable assurance that the author adheres to that organization's high standards of responsiveness. If the software carries no such notice, you might be wise to check with the ASP Ombudsman, PO Box 5786, Bellevue, WA 98006, CompuServe 70007,3536, to see if complaints have been lodged against the vendor before you send in your money.—eds.

User Group Consumer Alert

I would like to contact others who sent membership fees to join the following user groups:

San Francisco Ventura Publisher Users Group—$20/year

San Francisco PageMaker Users Group—$20/year

Hewlett-Packard DeskJet Printer Users Group—$16/year

San Francisco Desktop Publishers Users Group—$20/year

San Francisco First Publisher Users Group—$20/year

All were advertised in *MicroTimes* in January and February of 1989 by Vincent Poy, 895 Pacific Avenue, Suite 638, San Francisco, CA 94133-4340.

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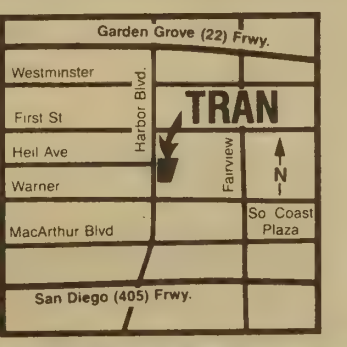

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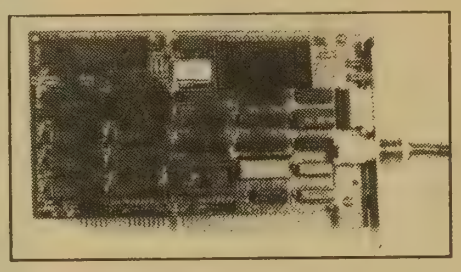

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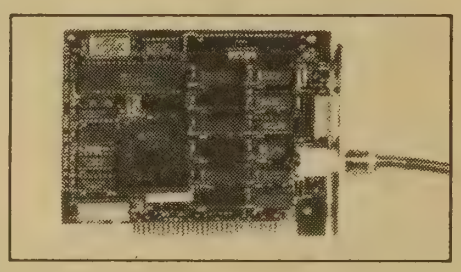

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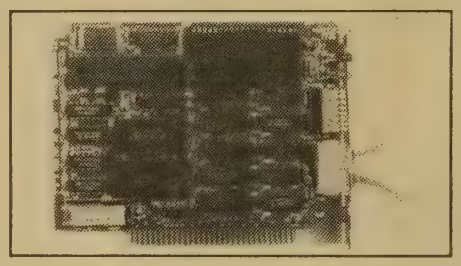

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June 24 Shop Till Ya Drop Computer Swap. CSU, Northridge. Richard James. Call: 1-800-433-7469.

June 25 Computer Show. Oceanside. East-West Computer Shows. Call: (415)388-8893.

June 26–29 Basic Project Management: Planning, Scheduling, And Control Information Meeting. Los Angeles. American Management Association. Call: Vern Lautner, (212)903–8208.

June 27–28 Procurement Fair. Santa Clara. Industry Council For Small Business Development. Call: (408)974-0223.

June 27–August 3 Introduction To Electronic Music: Sound Synthesis & MIDI. Los Angeles. UCLA Extension. Call: (213)825-4191.

June 27–30 Software/User Interfaces: Designing Principles & Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 27–30 Digital Signal Processing: Techniques & Applications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 29 Europe 1992 And The US-Canada Free Trade Agreement Seminar. Irvine. KPMG Peat Marwick. Call: Lynne Fagan, (714)850-4300.

July 6 Multimedia & HyperCard SIG Meeting. Los Altos Hill. Software Entrepreneurs' Forum. Call: David Gewirtz, (415)345-4620.

July 8 Shop Till Ya Drop Computer Swap. Los Angeles. Richard James. Call: 1-800-433-7469.

July 8 Computer Marketplace. Long Beach. RK Productions. Call: (408)978-7927

July 9 Shop Till Ya Drop Computer Swap. Glendale. Richard James. Call: 1-800-433-7469.

July 10–14 C Language Intensive: An Application-Based Seminar. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 11-13 The Desktop Presentation Graphics Conference And Exposition. Los Angeles. Desktop Presentations, Inc. Call: Dr. William Coggshall, (415)968-4105.

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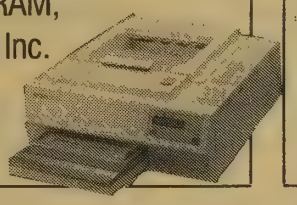

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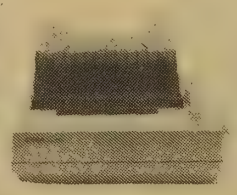

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July 11–14 C Programming Hands-on Workshop. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 11–14 Troubleshooting Datacomm & Networks: Hands-on Workshop. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 11–13 1989 Desktop Presentation Graphics Conference And Exposition. Los Angeles. Cambridge Marketing, Inc. Call: 1-800-262-3378.

July 11–14 Artificial Neural Networks Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: Institute in Computer Science, (408)429-4535.

July 11–14 Writing Better Computer Software Documentation For Users Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 11–14 Fault Tolerant Computing Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 11–14 Software Requirements & Design Specifications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 11–14 Microprocessor Troubleshooting: Hands-on Tools & Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 11–14 PC Networking: Hands-on Workshop. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 11 Macintosh SIG Meeting. Cupertino. Software Entrepreneurs' Forum. Call: Tony Meadow, (415)644-9400.

July 12–14 Communication Skills For Technical Managers Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 12–14 Introduction To ISDN Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 13 IBM Technical SIG Meeting. Palo Alto. Software Entrepreneurs' Forum. Call: Mike Schmit, (408)244-6826.

July 15 Computer Marketplace. Ventura. RK Productions. Call: (408)978-7927.

July 17–19 An Introduction To 4.3BSD UNIX Internals: Data Structures And Algorithms Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

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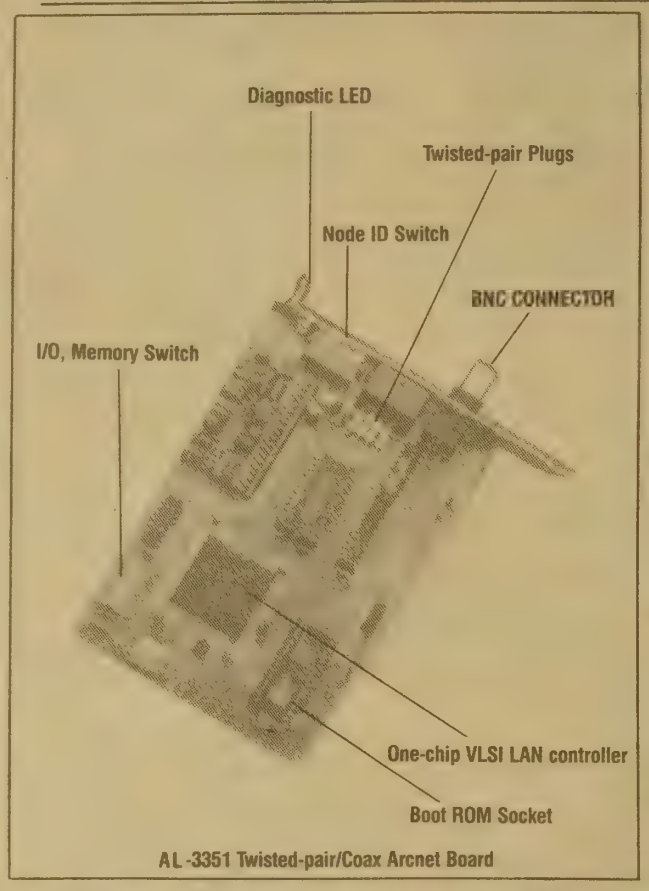

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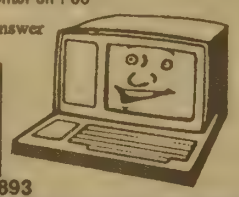

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July 17–19 VLSI ASIC Design: An Overview Class. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 17–19 Object-Oriented Programming Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 18–21 Introduction To Telecommunications Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 18–21 Software Quality Assurance & Testing Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 18–21 Expert Systems Design & Development: Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 18–21 Knowledge-based Systems & Artificial Intelligence Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 18 OOP SIG Meeting. Mountain View. Software Entrepreneurs' Forum. Call: Dean Ritz, (415)691-6727.

July 19–21 Influence Skills In The Technical Environment Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 20–21 An Introduction To 4.3BSD UNIX Networking Internals Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 20 SEF Meeting: Discussion Of Software Distribution Through Catalogs. Palo Alto. Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219.

July 22 Computer Marketplace. Santa Monica. RK Productions. Call: (408)978-7927

July 22 Shop Till Ya Drop Computer Swap. Riverside. Richard James. Call: 1-800-433-7469.

July 25–28 CASE: Computer-Aided Software Engineering, Hands-on Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 25–28 ADA Programming & Software Engineering: Hands-on Introduction Class. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 25–28 C Programming Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 25–28 Image Processing & Machine Vision Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421–8166.

July 25–28 Introduction To Software Engineering & CASE Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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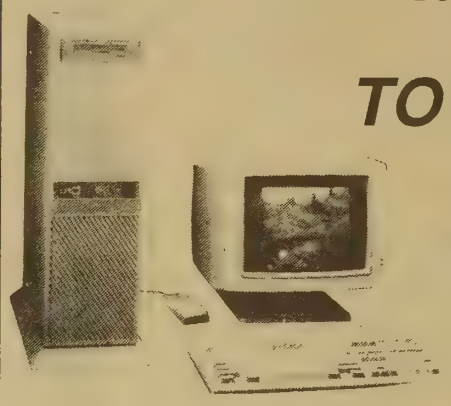

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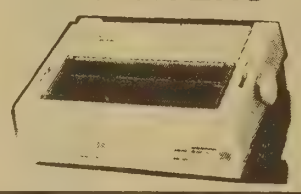

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July 26–28 Computer Graphics Of Fractals: Algorithms From The Frontiers Of Research Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 26–28 C++ For Programmers Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 27 Marketing SIG Meeting. Palo Alto. Software Entrepreneurs' Forum. Call: Don Morrison, (408)425-7222.

July 29 Computer Marketplace. Pomona. RK Productions. Call: (408)978-7927

July 29 Shop Till Ya Drop Computer Swap. Anaheim. Richard James. Call: 1-800-433-7469.

August 1–2 Fuzzy Theory And Applications Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 1–4 PC Networking: Hands-on Workshop. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 1–4 Digital Signal Processing: Techniques & Applications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 3–4 Administration of BSD-Based UNIX Systems Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 7–10 Advanced Project Management And Project Leadership Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 7–9 C++ And Object-Oriented Programming Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 7–9 C++ And The Macintosh Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 8–11 Software Requirements & Design Specifications Course. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 8–11 Expert Systems Design & Development: Hands-on Workshop. San Diego. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

August 9–11 Micro/Mini & Micro/Mainframe Connectivity: Practical Linking Tools & Techniques Course. Los Angeles. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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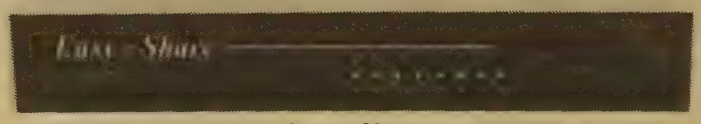

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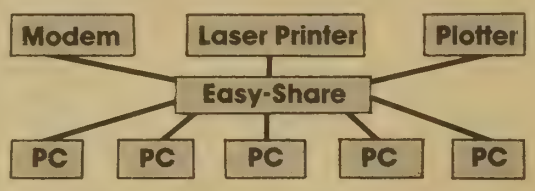

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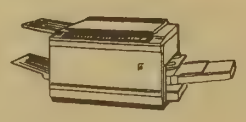

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August 23–25 Empowering The User: The Design Of Human-Computer Interfaces Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 28–September 1 11th World Computer Congress. Moscone Center, San Francisco. International Federation For Information Processing. Call: (303)831-6338.

September 6–8 9th Symposium On Computer Arithmetic. Santa Monica. The Computer Society Of The IEEE. Call: Prof. Algirdas Avizienis, (213)825-3028.

September 12–14 The BusBoard Users Conference And Exposition. Marlborough, MA. Conference Management Corporation. Call: (203)852-0500, ext. 221.

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NEWS AND ANALYSIS

BY PAUL HOFFMAN

IN THE NEWS . . .

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Pickets At Lotus, Licensing At Xerox, Networking At Apple

Taking one of the first public stands against the expanding role of lawsuits in the computer industry, 150 computer scientists and programmers from the Boston area recently picketed the Cambridge headquarters of Lotus Development Corporation. The group was protesting Lotus's lawsuit against Mosaic and Paperback Software over the "look and feel" of the *1-2-3* clone programs. The protesters objected to Lotus's attempt to prevent other companies from using the user interface of *1-2-3* in their own programs.

In a town more known for protests about minority admissions and nuclear weapons, the protest drew a great deal of support from students and professors who felt that lawsuits were stifling the creativity behind much of the computer industry. Although the protests were against Lotus, many protesters said that they were equally angry with Apple for its suit against Microsoft and Hewlett-Packard and the threats Ashton-Tate has made against dBASE clones.

The protest was organized by Richard Stallman, creator of the EMACS program and driving force behind the GNU operating system development team. He used the protest to form a new group, the League for Programming Freedom. The League will continue to pressure corporations to be more open with the technology they create and spend more money on moving technology forward instead of trying to prevent others from adopting the best parts of the new technologies.

Other protesters included MIT computer luminaries Marvin Minsky, Gerald Sussman, and Patrick Winston; Brian Kocher, president of the Association of Computing Machinery; and Ray Solomonoff, a widely respected mathematician.

Xerox Attempts To License User Interface Technology

Jumping into the user interface fray with both feet, Xerox announced that it expects any manufacturer that has a user interface that uses technology similar to what Xerox developed in the late 1970s and early 1980s to buy a license and pay royalties.

This announcement was met with mixed reviews by computer lawyers, many of whom contend that it is much too late for Xerox to begin demanding licenses. Others say that it is high time that Xerox cleared the air about what technologies it thinks it owns and how much it will charge others to use it.

Before the announcement, Xerox had only made licensing agreements with two companies: Sun Microsystems last year and Metaphor Computer Systems last month. It was the announcement of the Metaphor deal (which followed a lawsuit by Metaphor over the interface) that caused Xerox to announce that the interface was for license.

Metaphor sued Xerox earlier this year because it felt that Xerox had begun sabre-rattling over Metaphor's wide-ranging deal with IBM. That suit was meant to settle the issue of whether Xerox owned anything on which Metaphor might infringe in Metaphor's user interface. Instead of taking the case through the legal system, Xerox decided to settle early by giving Metaphor a license to all Xerox copyrights and patents relating to the user interface. However, no one is really sure what those copyrights and patents are and whether they would stand up in court if challenged.

"The industry's reaction to Xerox was generally one of derision and disregard"

Xerox has been exceedingly lax in specifying what it owns and in making any claims before now. Since the basic copyright that Xerox claims was filed in 1981, its arguments are even more suspect, because unenforced copyrights are usually denied if the owner tries to claim them after they are widely copied. Also, Xerox's claim of copyright is fairly weak on its face, since few companies have copied the look or feel of the Xerox system exactly. It appears that Xerox is attempting to claim copyright on basic ideas like icons and scroll bars.

The industry's reaction to Xerox was generally one of derision and disregard. Apple said that it saw no need to license anything from Xerox, since Apple's ideas were only partially derived from the Xerox interface, and Apple had added a substantial amount of creative work to it before releasing their own Macintosh interface. Other companies said that they would have considered getting a license five years ago but thought that it was much too late for Xerox to be asking for one now that the general concepts have received widespread use.

Although some lawyers were recommending that their clients pursue Xerox's license, many said that it appeared that the license would provide nothing other than a false sense of security. Xerox refused to

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announce publicly how much it was asking for the license or what protection the license would give, although they said that the fee was "fair but not nominal."

The move by Xerox was credited to William Lowe, now executive vice president at Xerox but formerly president of the personal computer division at IBM. A Xerox spokesperson said that they thought the move would "raise the company's profile in the industry."

Toshiba To Sell SPARC UNIX Computers Into Mass Market

Giving Sun Microsystems an additional boost in its efforts to make its SPARC CPU architecture an industry standard, Toshiba announced that it will begin to produce SPARC-based systems in a variety of sizes. Toshiba said that it will put the systems into the smallest boxes possible, which means that it could possibly make the first portable SPARC system using proven Toshiba miniaturization technology.

Toshiba introduced UNIX systems to Japan and had a long history of supporting UNIX on as many of its models of computers as possible, even when the market didn't really support it. While other SPARC manufacturers are concentrating on the middle and high end of the market, Toshiba could make the first stab at creating a fast, flexible, low-end UNIX system.

Toshiba will not manufacture its own SPARC chips, but will instead buy them from a Japanese or American supplier. However, it licensed a wide variety of SPARC-compatible software from Sun, including the Open Look user interface and Sun's NFS networking software.

Toshiba's move is interesting in that many vendors of high-end PC compatibles are failing miserably in the UNIX market. XENIX for PC compatibles, the most widely-used version of UNIX, has barely caught the attention of anyone outside of the standard UNIX marketplace. This is partially due to its basic slowness, even on 80386 processors, and also due to its archaic user interface.

If Toshiba can create a small, efficient, inexpensive computer based on the SPARC CPU that is easy to use, it could make users and software vendors much more interested in SPARC-based UNIX packages. The Open Look user interface is similar to the Macintosh in ease of use, so a small UNIX system could be easily adopted in the same markets as the Macintosh if enough software vendors support it. If Toshiba could cram the SPARC CPU, enough RAM memory, and a reasonably fast (although not necessarily large) hard disk into a portable package, Toshiba could have a logical extension to its very popular portable PC line that would last well into the 1990s.

Toshiba said that it expects its first SPARC system to be available within a year, and it will probably give the industry some hint about how it will proceed from there.

IBM Introduces OfficeVision Applications For PCs, Minis, And Mainframes

Hoping to tie PCs running OS/2 more closely to its mainframes, IBM announced a series of system and application programs that are its first comprehensive series of products compliant with its SAA program and user interface.

The OfficeVision series of programs will run on the full range of IBM computers and will allow users of one type of computer to use the same application on other computers with little retraining. In addition, all the programs will be able to retrieve data from a network, so that data can be stored on a mainframe and accessed automatically by any computer on the network.

The programs will be available later this year, when IBM and Microsoft release the next versions of OS/2 that contain the software needed to connect to the network. The initial interest in the programs will be for current mainframe and minicomputer users who want to see how the programs that they already use will look in the new versions.

IBM noted that to run these programs on PS/2s requires huge amounts of RAM memory. Some applications that require the use of OS/2 Extended Edition could require 8 Mb of RAM just to be able to run.

Save Some Trees: Stop Sending Stupid Press Releases

I freely admit that this is not an original idea. It was started a few years ago by John Dvorak, who complained about useless press releases from silly companies. The anti-junk call was recently picked up by Denise Caruso, computer correspondent for the San Francisco *Examiner*. She spent her entire Sunday column (usually devoted to at least two rumors and the discovery of some interesting small company) pleading with computer companies to stop sending useless press releases to everyone on their lists and for direct mail companies to be more selective about who gets their junk mail.

I'll join that chorus in hopes that the computer industry can start doing its part to reduce paper waste and to stop wasting each other's time. Every month I get a stack of at least 150 press releases. You'll notice that I don't try to cover 150 items in my column. In fact, I rarely cover items that I didn't hear about from friends in the industry or in the regular and business press.

If you've read my column a few months in a row, you could get a feeling for what I write about and what I don't. So why do I get 50 letters a month "announcing" that some person, usually a white man in suit, has been promoted from one position in a company to another? Ego on the part of the company (they think that somehow someone cares about their middle management) and desire on the part of their PR firm to generate more money. The only places where these letters might get printed are in those small print blocks in the business sections of newspapers that need to fill space so that the sports and investment ads don't overwhelm the lack of news.

Why, then, do the PR agencies send out thousands of copies of these letters to magazines that have never run a single item like them? Ego and money churning.

Not quite as bad as the middle-management-promotion letters are the announcements of new versions of products. These are certainly of value to some magazines and to the users of the programs, especially if the company does the standard trick of losing 20% of its registration list every time it sends out an upgrade notice (Microsoft is the industry leader in this field). However, why send these letters to computer newspapers that never were interested in the product initially? And why send more than one letter to the paper? *MicroTimes* often gets the same press release sent to every person on the masthead. This is clearly a sham on the part of the PR agency who tells the client "We have a list of xxx names in the press and we'll send your press release to every one."

I am not complaining that these people are making my job difficult: I can throw out spurious letters as easily as anyone. I am worried about the environment, both the number of trees we are destroying and the mounds of trash created by the discarded, unread releases. The number of releases sent out could be easily cut in half by culling out duplicates in the mailing lists, and could probably be cut in half again by being selective about which magazines get the releases at all.

Reducing the piles by 75% is certainly a good start on reducing the adverse impact of public relations on the world's forests. If the environmental argument is a bit too esoteric for you, there is a serious financial impact on companies creating letters that will only be discarded. With the coming recession and increasingly effective competition from outside the US, companies should be taking a hard look at how to be more productive. Spending thousands of dollars on shotgun PR or direct mail is not productive. Targeted direct marketing over the telephone has a much greater impact; you get a sense of whether the person being called will ever be interested in what you are saying; and it doesn't waste paper. It also creates a direct link to the intended recipient, something that few companies are very good at these days.

Personal communication will also virtually eliminate worthless press releases: what PR hack wants to hear 1,000 people respond to the question "Would you be interested in us sending you a press release about Joe Whitemaninsuit being promoted to VP of Finance?" Maybe this will teach them what is really important in the industry and what is useless fluff.

Direct mail advertising is another villain here. Even the most optimistic of direct mailers hope for 5% response. It's time for the advertising mavens in the industry to come up with other ways of marketing. Everyone who says that "direct mail is the only way" should be forced to spend a week sorting recyclable products at the local dump for every direct mail piece they produce. They should also be prohibited from spending any vacation time in a forest. The greenhouse effect isn't just cars and factories: it's lack of trees, or, more precisely, overabundance of wasted paper.

—Paul Hoffman

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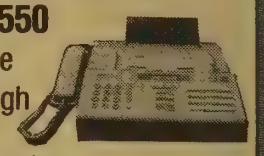

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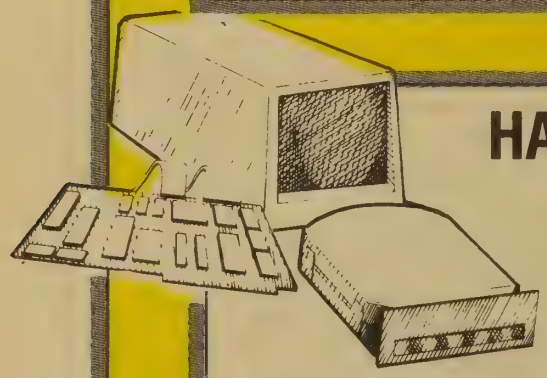

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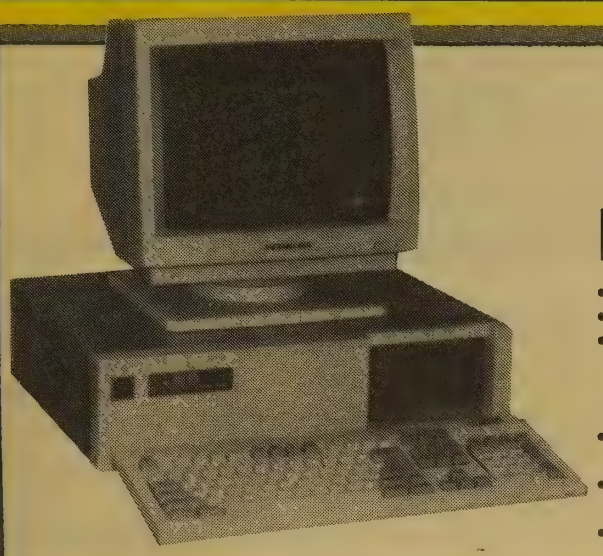

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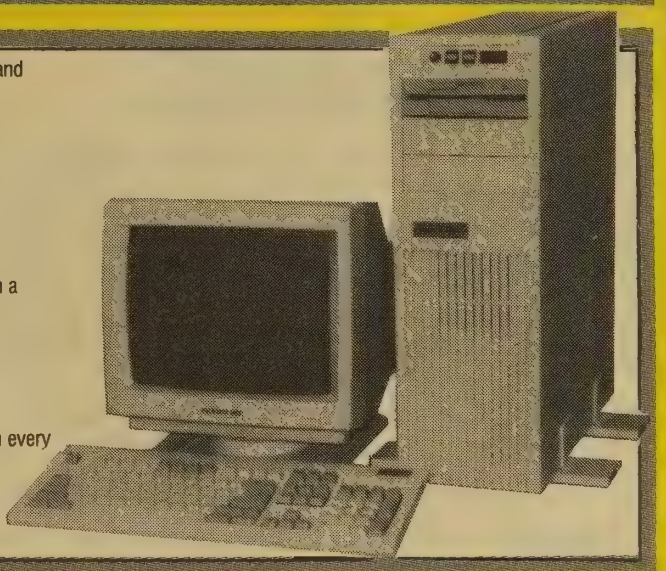

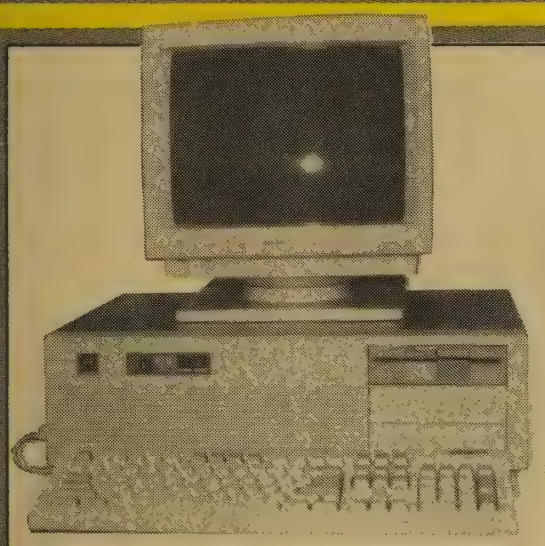

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NEWS AND ANALYSIS

Apple Gets Networking Fever

In case you haven't gotten the hint from Apple's style in the last few years, Apple makes announcements in bunches. One bunch come at MacWorld Expo in January; then there's often a non-Mac announcement soon thereafter, then a lull until mid-spring.

On June 12, Apple made a large series of Macintosh-related announcements related to networking (Apple called it "connectivity"). None of the announcements were all that shocking, since they were generally announcing Apple selling products that third parties were already doing as well, probably for the same price or less. However, the sheer number of products in all areas of networking and the breadth of the announcement made it important to the rapidly growing number of sites that have a Macintosh and a network of other computers such as minicomputers and mainframes.

As usual, the topics of the discussion were widely reported in the trade press for weeks before the announcement because Apple had a press conference nearly a month earlier and handed out lots of literature (minus photographs) for all the products. Also as usual, many newspapers and magazines reported the highlights and pretended that they got the info from "sources." In fact, this article was written before the announcement and only checked for accuracy and inclusion after the announcement.

The announcement may seem jumbled due to the variety of products that it announced, but that was fine with Apple. The message is that Apple could support almost any type of networking with the non-Apple world.

Hardware and software vendors for the Macintosh have become accustomed to a common problem: no one knows that they exist until Apple competes with them. Fortunately, Apple continues to charge high prices for both the Macintosh and Apple-brand peripherals and software so that third-party developers don't get crushed when Apple moves into a market. Since every Mac has the basic networking software built into it, third-party developers have a huge advantage over their counterparts in the IBM world. Instead of having to pray that they are supporting the right networking software standard, Mac vendors have a known base on which they build. Apple's recent announcements give that base a much-needed endorsement from Apple itself.

In typical Apple style, the announcements were not for products that were ready yet. Most of the products will ship within the next six months, some as soon as next month, according to Apple. The announcements included four cards for the Macintosh II line: an EtherTalk card for high-speed transfer on most networks, a coax/twinax card for connecting to IBM SNA networks as a terminal, a token-ring card for connecting to other IBM networks, and a new serial card for standard RS-232 connections. Notably left out of the hardware announcements were any cards that can be installed in Macintosh SE's or SE/30s. It is not clear whether these cards are forthcoming, whether Apple does not feel that these are as important parts of non-Apple networks as the

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NEWS
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II, or whether Apple will rely on third-party cards for these systems. Although many of the Macintoshes sold to large companies are Mac IIs, there is certainly a strong showing from SEs and Pluses.

Apple is, however, helping managers of AppleTalk networks with its InterNet Router, which lets you connect AppleTalk networks with Ethernet and token-ring networks. Apple hopes that this will prevent minicomputer and mainframe sites from requiring that all nets within a company must be of one type. The router allows for (supposedly) transparent communications between the three types of networks. Thus, if a department in a company that has standardized on token-ring wants to have just Macintoshes and doesn't want to buy all Mac IIs, they can use SEs connected by AppleTalk with one Mac II connected to the token ring running the router.

The software announcement most likely to get the attention of the IBM mainframe world is *MacAPPC*, the long-awaited software that would let Macs act as servers and clients on SNA networks. *MacAPPC*, a method for passing data and instructions that IBM hopes will become universal on its networks, will eliminate a large barrier to Macs in mainframe environments, since Macs will now be able to do everything that PCs with APPC software can do. Apple also announced other products that let Macs act like 3270 terminals, the most popular type of terminal used with IBM mainframes.

The other announcements were for networking software. Apple announced a greatly improved version of *AppleShare PC*, its main software product for hooking PCs and Macs together over LocalTalk networks. Apple has fallen far behind other network vendors, notably TOPS, because their software for the PC was hard to use and not very flexible. The new *AppleShare PC* software should help get Apple more sales, although they will have a hard time displacing TOPS. They also announced *MacX*, a package that lets any Mac act as an X server and therefore participate in many of the newer UNIX networks. As more X-based software becomes available, this product will help Apple sell the Macintosh as standard X terminals that can, of course, also run all the regular Macintosh software. A different product, *MacX25*, will let Macintoshes become servers for X.25-based networks.

Apple also announced it will produce servers for its CL/1 database language that allow databases to be shared over networks. This software, which runs on minis and mainframes on a network, allows Macs to access data from databases as if they were on local systems. CL/1 relies on the emerging SQL standard for data queries. It seems unlikely that many people will be interested in the CL/1 network since it is being supported almost exclusively by Apple. Instead, they will go with the standards that are coming from Microsoft and IBM. For CL/1 to survive, it will have to coexist well with whatever SQL-based server software becomes popular. Since the CL/1 packages are the furthest from being released, it is not clear if CL/1 will even be able to get a foothold in the market. ■

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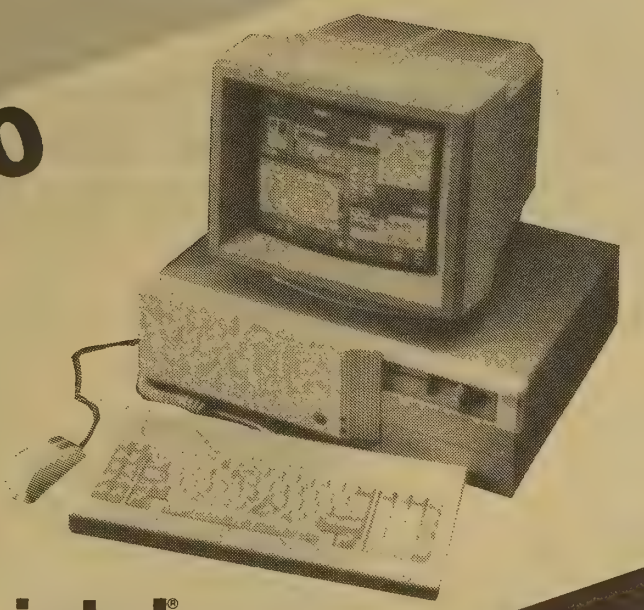

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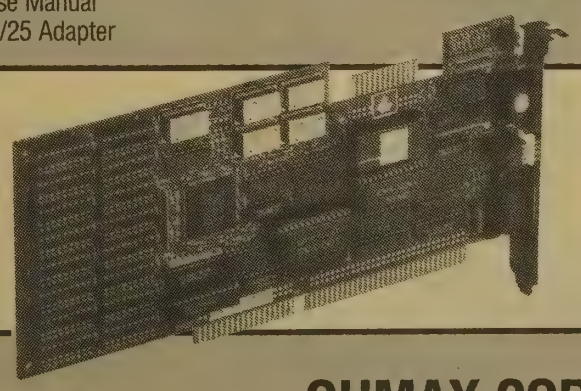

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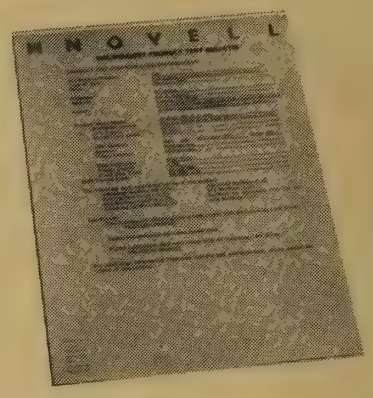

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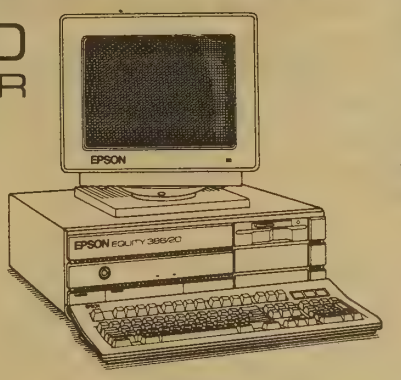

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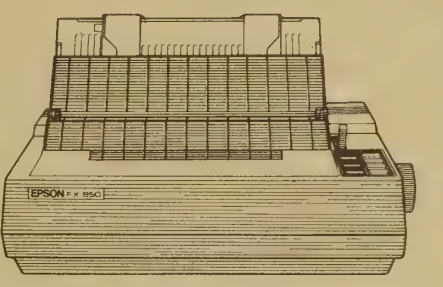

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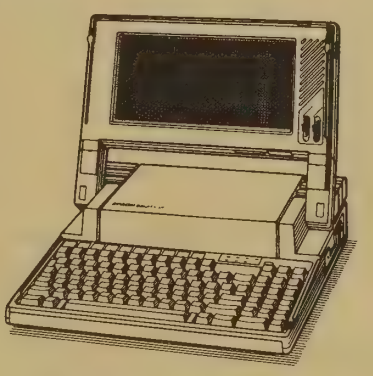

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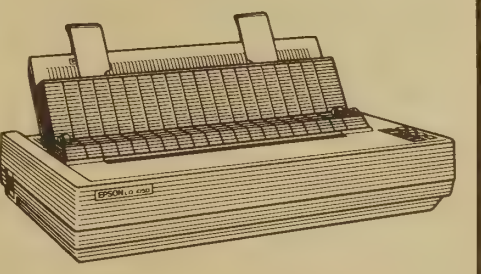

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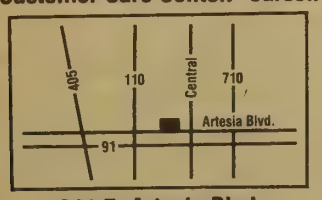

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Collaborative Decision-Making

This column presents practical proposals for microcomputing's innovators. Be one.

Toys Vs. Tools

For well over a decade, I have said: Micros are and will remain primarily interesting, challenging, provocative—sometimes infuriating—toys, relatively speaking, until they have access to significant information in machine-readable form, useful for significant decision-making.

Example of significant applications to date: Spreadsheets used for major financial analysis require data usually laboriously keyboarded by the decision-maker. Computer-aided drafting requires drawing details, usually clicked/keyed by the decision-maker (though stock "parts drawings" are becoming available). Other examples abound (as do exceptions).

For consumer use, libraries of information—engineering, medical, legal, governmental, literary, etc.—must become economically available (low-priced) in machine-readable form—CD-ROM or network access.

Perhaps more important—computer assistance will become invaluable when time-sensitive information is "published" by digital broadcast (a future column will detail the DataCast Project). Such practically useful information includes news, but—of more daily utility—includes grocery prices, real estate listings, auto sales, theatre schedules, restaurant offerings, gas prices, community news, school information, etc.—the information most individuals use in daily decisions.

Become an electronic publisher; become a digital broadcaster. Price services at consumer prices and look to mass consumption for your fair profit. (Please note that broadcasting avoids the costs of physical media—e.g., floppies or CD-ROMs. It also avoids mass distribution costs and delays.)

Computer-Assisted Collaboration, Part 2

Expect ongoing mention of this topic. I remain convinced that computer-augmented group decision-making will become one of the most significant applications of computing.

Context: Interconnected personal computers—perhaps including a mainframe—used by decision-makers. For example—programmers or engineers collaborating on a product, two or more educators coordinating educational improvement, team-directed projects, shared division leadership, corporate coordination, attorneys/clients drafting agreements—and maybe, someday, informed and equitable governmental processes.

Robust Teleconferencing

Minimum groupware should permit multiple personal computers (or terminals) to "teleconference" over most networks/interconnections. They would show identical displays—except perhaps for an individualized site line. Actions by any active participant should immediately be displayed everywhere. This includes pointer movement, text/drawing changes, display of temporary cross-references, authorization sign-offs, etc.

Participants need not be in the same room—nor the same nation—to immediately share the discussion and consider proposals in such shared development. Yet each may highlight items of interest, suggest changes, or cite references. Each might retain an immediate personal copy; each may "sign" the agreed-upon result.

Minimum groupware should allow individuals to be active participants able to discuss and authorize proposals. It should also facilitate "observers." A passive observer could watch all the discussion, but not point or otherwise participate. An active observer could point and comment, but not have their input/comments/questions permanently recorded or finally included unless authorized by an active participant.

Robust Groupware Balloting

At decision-points, groups poll their members. Groupware should include polling tools more extensive than traditional for/against vote-recording. Some options (please propose others):

Consensus-voting: If no one opposes a proposal, it is accepted. This permits decision-makers to avoid stating active support for a proposal with a "for" vote. (Among other things, consensus-process was crucial in constructing the landmark UN Law of the Sea Treaty. Most countries were unwilling or politically unable to record active support for some of the negotiated positions within the complex agreement.)

Intensity-voting and multiple choice: Adequate groupware should facilitate intensity-voting—1-to-3, 0-to-10, etc. Similarly, it should allow multiple-choice voting—1 of 5, 2 of 7, 3 of 4, etc.

It should support several vote-results displays. It should also support "calling the vote" options—identified vote-caller, unidentified vote-caller ("Go for it!" someone shouts from the crowd), called only by the presiding officer, etc.

Note possible changes in parliamentary procedure that groupware may suggest.

Egalitarian Processes

Our society has moved beyond blind, docile obedience to the dictates of "proper authority." Since the '60s, more and more people are demanding more participation in decisions that impact their lives, communities, and work. (Chinese "dissidents" are not the only ones demanding increased democratization.) **Opinion:** This egalitarian demand is just. Adequately implemented, it leads to better decision-making and more robust solutions.

Opinion #2: Many in power traumatically resist such sharing of authority—as some "subordinates" resist accepting associated responsibilities and consequences. But, this egalitarianism will transcend old corporate and community dictatorships (others will simply die)—and many autocrats will bitterly never quite understand what happened.

Computer-assisted group cooperation can greatly assist and enhance these worthy societal and workplace improvements.

Doug Engelbart: Visionary Becomes Realist

Many of my suggestions about computer-assisted group processes derive from working with the topic's visionary and great-granddaddy—Doug Engelbart, in Stanford University's new Bootstrap Project, which Doug recently founded and directs.

Whereas microcomputing is just now addressing this computer application—with bumpy hacks at groupware products—Dr. Engelbart dreamed up many of these concepts in the late '50s and implemented such a system 'way back in the mid-'60's at Stanford Research Institute. He founded and directed the Augmentation Research Center and its Augmented Knowledge Workshop, all implemented on an old SDS-940—one of the earliest time-sharing systems.

Aside: Doug also originated the mouse, created the first two-dimensional editing system (display-oriented), and was the first to demonstrate such things as remote procedure protocols, mixed text and graphics, and shared-screen viewing (as above)—all implemented over 20 years ago. (He also ran ARPA's early Network Information Center, begun in 1967.)

The Bootstrap Project is an effort to collect and circulate Doug's knowledge and insights, develop the best in groupware design, and place it in the public domain.

Share Where? Share Here!

Send suggestions for your practical computer fantasies to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

Copyright © 1989 by Jim Warren. All rights reserved. *Jim Warren founded the West Coast Computer Faire, the* Silicon Gulch Gazette *and* Infoworld *newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS* Computer Chronicles *series, founding editor of* Dr. Dobb's Journal, *and founding president of the Microcomputer Industry Trade Association.*

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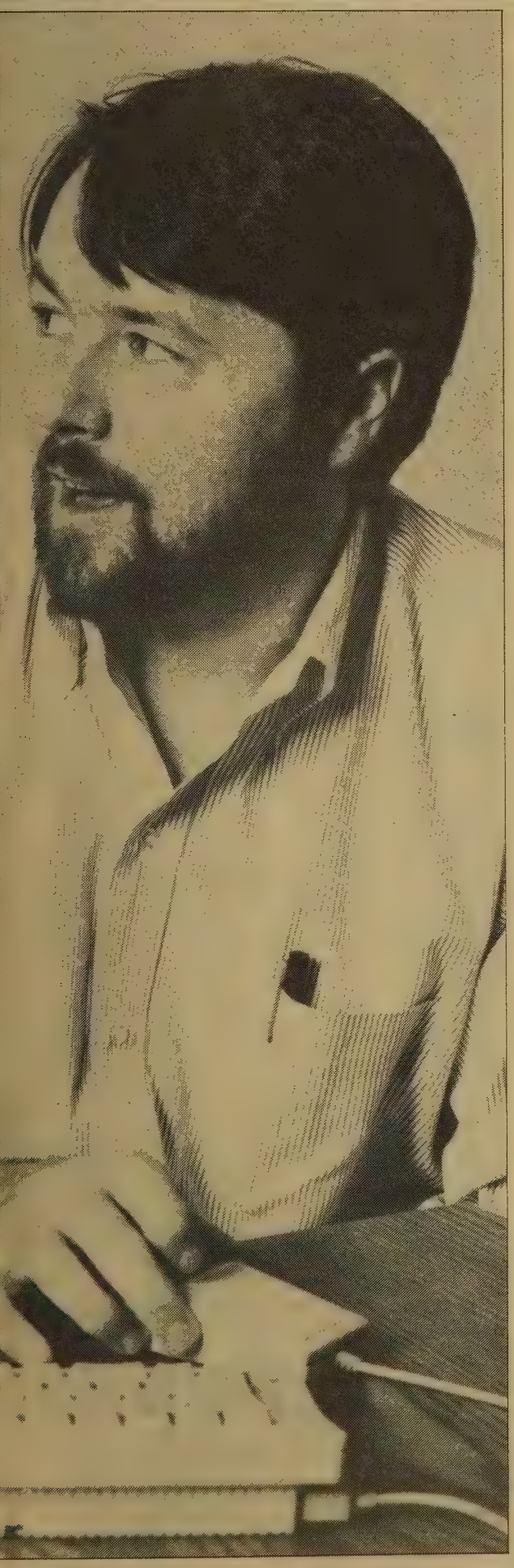

(Editor's note: One day in 1985, probably about the time I swiped the Mac off of our distribution manager's desk and never looked back, I attended my first BMUG meeting. A fairly momentous one, as it happened.

A few weeks earlier, Apple had announced AppleTalk, a system for networking Macintoshes and LaserWriters. It was relatively easy to set up and revolutionary in that it could be implemented for the amazingly low price of $50 per connection.

At the BMUG meeting, president and founder Reese Jones, then a graduate student at Cal, gleefully announced BMUG's latest technological triumph, BMUGnet. BMUGnet matched AppleTalk's functionality; it was, however, enormously cheaper than AppleTalk, since, with hackerish zeal and disdain for expensive proprietary solutions, the wizards of BMUG had built the whole thing from standard, off-the-shelf phone company parts.

BMUGnet was eventually renamed PhoneNET, and it became a vital element of many vendors' Macintosh networking systems. And from these origins grew Farallon Computing, currently the purveyor not only of PhoneNET, but of a wide range of building blocks for the multimedia, multi-vendor networks of the future.

Farallon's come a long way in its brief existence, and become a key player in the world of Mac networks, local and wide area. We sent Steve Guttman to the company's Berkeley headquarters, where he met with Jones and discussed the company's current product line and goals for the future.—Mary Eisenhart)

By Steve Guttman

"Network plumbing" doesn't necessarily conjure up visions of state-of-the-art communications technologies and high speed computers. But perhaps it should. It's the term Reese Jones, president of Farallon Computing, uses to describe his company's particular affection for building tools that help create and maintain AppleTalk networks. Those in the Macintosh community needing their network pipes "cleaned or soldered" often use Farallon's products and services. "It's kind of grunge work," says Jones. "And we're quite happy to do it."

Most of us know Farallon by the trademark PhoneNET connector hanging off the back of our Macs. You know, the little cream colored box with the Mac connector on one end and a telephone jack plugged into the other. Most Mac aficionados who are networked to laser printers and file servers pretty much take connectivity for granted. "Oh yeah. You just plug that thing into the back of your Mac, and then you're all connected."

But those who've worked on PC networks and have experienced the "daily crashes" know that network integrity is a privilege—not a right. Mac programmers have always had to work extra hard to build applications that were simple and intuitive; this ease of use is taken somewhat for granted by users. The ability to easily construct hassle-free Macintosh networks with telephone wire is a tribute to Farallon's ability to protect users from the inherent complexity of network technology.

Jones was studying for his doctorate in biophysics at UC Berkeley in 1984 when he became enamored with the Macintosh. While doing graduate work at Lawrence Berkeley Labs, he began experimenting with connecting the Mac to different computers and lab instruments, and later started BMUG (now, the world's largest Macintosh-oriented user's group) as a forum for exchanging ideas about using the Macintosh for communicating with these other devices.

Jones invented the PhoneNET system while trying to figure out how to connect his LaserWriter to Macintoshes in different rooms of his house. The connectors use ordinary twisted-pair telephone wire and make use of the two wires in normal telephone wiring that are not used by the phone company (telephones only use two wires of the four-wire set)—an accomplishment that was believed to be impossible at the time. Over 700,000 PhoneNET connectors have been sold to date, accounting for over half of all networked Macintoshes (according to IDC).

Farallon can be found about six blocks from the UC Berkeley campus, at the intersection of two one-way streets—which is perhaps fitting, given the single-minded direction Farallon has been moving in since its 1986 founding. It has doggedly widened its market niche into a well-defined ledge, and is turning that ledge into a whole platform for a family of networking products. Along with PhoneNET, Farallon also sells various and sundry network management hardware and software. In 1988, Farallon acquired WOS Data Systems of Lawrence, Kansas—developers of *Timbuktu* and *Timbuktu/Remote*, software which allows a user to view the screen of or take control of another Macintosh either on a network or via modem. The *Timbuktu* products can be used for remote support, training, and collaborative computing—where two or more people work on one application screen at the same time.

Farallon is also testing the multimedia waters with its MacRecorder and ScreenRecorder products. MacRecorder is a hardware/software combination that includes a microphone, and allows users to digitize, edit, and play back voice with the Macintosh. In combination with *ScreenRecorder*, software THAT can save and play back screen ses-

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sions, users can create voice-annotated demonstrations that can be played from within *HyperCard*. MacRecorder is also used to record sound for use with *VideoWorks* presentations.

Interviewed recently at the Farallon office, Jones offered an inside view of the current and future directions for Mac and multivendor networks.

Could you talk a little bit about the origins of the company? In particular, what challenges have you and the company faced in becoming a viable, commercial enterprise?

Farallon's about three years old now. The way it got started was—when I started BMUG, the main thing I was doing at the time was using the Macintosh to connect to a Vax computer and a PDP and a couple of IBM laboratory instruments and things of this nature. At the time that the Macintosh first came out, the general press and the general dogma was that it was a terrible machine—it was very poor at connecting to other things, it had no communications capabilities, etc., etc. And here I was using the Macintosh to connect with all these other computers, as were a lot of other people at Lawrence Berkeley Labs and so forth.

My interest in getting BMUG rolling was as a forum to exchange ideas about using the Macintosh to communicate with these other things, and all the other things you could do with this computer, sort of exchanging ideas about how to do this. One of the things we used to do at BMUG meetings early on was to have make-your-own-cable night—this is how you make a cable to attach to an Osborne, and a PDP, and to an IBM PC, and other things like this. And this is the software you use to transfer back and forth. And there were little programs on the Vax and little programs on the Macintosh to send things back and forth.

So in the BMUG newsletter I would write these articles about how you attach to a Vax, how you attach to a PC, how you transfer files back and forth, how you convert the files from one form to another—that kind of thing. And then, in the second year of BMUG, Apple came out with the LaserWriter and AppleTalk.

This was '85?

Eighty-five, yeah. I got one of the first LaserWriters that came out. BMUG was operating in one bedroom in my house, and my office was in the other bedroom in my house, and what I wanted to do was connect the computers in the BMUG office to the LaserWriter that was in my office. I started experimenting around with different ways to do that, and came up with "Well, why not use the telephone wire that already goes to both those places to do that?"

I started experimenting around with different circuits that allowed you to run the LocalTalk protocol from the one place through the telephone wire to the other. The big problem is how to isolate the computers from the telephone wires, and how do you protect the computers, and how do you deal with the termination of the signals in the wiring—these kinds of things. I wrote an article in the BMUG newsletter about how you do this—connecting these things together over the telephone wire. The engineering dogma at the time was "You can't do that, it's impossible; telephone wires can't support data rates that fast," etc., etc., where, obviously, it was working.

And so I wrote some articles about it that generated a lot of interest. And people said, "Well, why not make kits for solder-it-together-yourself cable night?" About that time an interesting CAD program for the Macintosh came out, and so we experimented around with these kits. Initially it was a baggie with all the parts you needed and a page of instructions on how to solder it together and how to use it, and then the articles from the BMUG newsletter about how to build networks out of these things.

That got a lot of interest in the academic and hacker community where people would buy these kits and put them together and stuff. And then in the early part of '86, companies started calling up saying, "Well, we want a thousand of these, all soldered together to include with our product." Companies like QMS, which makes printers, and TOPS—they were making software and they wanted to have this other way of connecting things together. So they called up and said, "Well, we like these kits, but as a commercial product to sell with our products."

So, it was a grass-roots sort of thing?

Yeah.

At that time, it became clear that, since BMUG is a non-profit institution, it didn't make sense to do it as that. So, I started Farallon to deal with the business aspects of making this a proper commercial product—refining the design until it was something that could be properly commercially sold, and getting the manufacturing started and that sort of thing.

In the first year Farallon started out with connectors and wiring and that kind of thing. But as people started to build larger and larger networks, they wanted to have network management software, and they wanted to know who was on the net, and where the traffic loading was, and they were trying to do all these things very simply. So we got involved very early on with things that have become in vogue very recently, such as network management. We just developed the tools. When the customer said, "Well, we really need something that does such and such"—we'd make it.

And this evolved into the whole PhoneNET system, which originally started out with trying to say, "Well, they do it this way with telephones. Why not try and take advantage of that for data networks or LANs?" We're continuing to follow that along through wiring closets and metropolitan distribution wiring and things of this nature—"How do you connect these two buildings together within a city? How do you connect these two cities together?" That type of thing, following telephone standards, or the way that they do it in telephones, up into larger and larger scale.

That has a significant advantage in that architects, wiring contractors, building designers, and telephone installers all know how to deal with PhoneNET, where they don't know what ThickNet, or ThinNet, or these other things are. Buildings aren't designed to deal with bus-based systems. They're designed to deal with star topology, telephone wire networks. And so by keeping the design following telephone-like standards for constructing the network, it makes it much easier to install into the average building. There's many more people wandering around who intrinsically understand how to put it together and can install it. So that's sort of been a focus on the design side.

Then on the customer side, just from our experience in BMUG—which is a consumer advocacy organization—we spent all our time worrying about what all the companies in the industry were doing wrong from the point of view of the customer, taking that to heart a bit in how we interact with customers in Farallon. Particularly with LANS, [we emphasize] areas like tech support and customer service and warranties and product reliability and simplicity/ease of use, as opposed to "mystical" performance or macho networking. Our focus has been more towards the consumer side of that—networks have historically been this macho, complicated, very difficult thing to deal with and we're trying to de-mystify that. You know, "It's like a telephone—you plug it together, if you have trouble, give us a call. We'll help you"—that kind of approach.

It turns out that customers like that, as you can imagine. And it has helped us in terms of—a lot of our early customers were people who had been involved with higher end networking in the past and had very bad experiences. You know, "It was too complicated. It was too unreliable. It really didn't work very well." We were sort of a second try for some of these customers. And you know our stuff is very simple to deal with, very reliable, easy to set up, easy to maintain. And so they like it.

Is your ability to do that a function of the design of the Macintosh, as opposed to the PC where networking is not built in, there are few standards, and things break all the time?

Well, the Macintosh marketplace—people who use Macintoshes are much less tolerant of minor quirks and things in the software than are people who use PCs. It's constantly amazing to me that companies who ship things for PCs that don't work, they go, "Ah, who cares." The customers don't seem to. They're much more tolerant than in the Macin-

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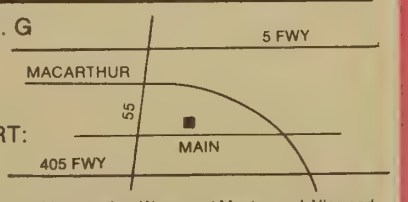

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"Ideally, two years from now, you'll be able to choose what's on your desk—whether it be a NeXT machine, or a Sun, or an IBM, or a Macintosh. And they'll all be relatively transparently connected together and have some kind of interoperability at that level."

tosh world, where with the Macintosh the customer will get furious if your icon has jaggies....It's quite a contrast, and I think that's one of the reasons why the Macintosh is being successful, is that the standards of quality and acceptability are much higher than they are for most MS-DOS products.

I'm not sure it's the customers are more tolerant, it's just that they're used to companies not being able to foresee every situation, what with five different video standards and several different network standards. It's sort of like being beaten down slowly.

If you want to do multimedia electronic mail, well, you have to be able to have audio and high resolution animation and be talking on the network—all simultaneously, and have somewhat of a standard. So there, you need a fairly high level of functionality in the machine that isn't there in the PC.

People always ask us, "Well, are you going to do PC software?" Or, "Are you going to do PC products?" or whatever. And the question is, "What is a PC?" Is it DOS 1, 2, 3, 4? *Windows*? EGA, CGA, VGA? *Presentation Manager*? OS/2? Who knows?! You don't know what's there. So if you're going to do, say, even an email system that crosses over to PCs, since you don't know what it's going to be that you're sending this message to, you're almost forced to degrade it to the lowest common denominator that you send to. It's the same problem in UNIX, in that there's no consistent imaging model; there's no consistent display type of system. At least most UNIX systems have networking built in—that's a start. But almost no UNIX computers have sound built in. And so you know you can't send voice because it just takes up disk space.

What kind of applications have people found for MacRecorder, besides making noises for SoundMaster?

Most of the things that people are actually shipping are these training type of applications...

The ScreenRecorder/MacRecorder combos?

Right. And we have more that are being done in that general area. But the new stuff we're doing has to do more with voice-mail, voice annotated documents, voice messaging—that type of thing.

I'm curious—do you see the Mac as some sort of vehicle that will take the place of voice mail, or as some kind of substitute for Centrex services?

No, as a complement to them. The whole focus of our company is to work on applying telephone-like thinking to computers. And if you think about what it is people use telephones for, they use it for talking to another person or talking to another person in non-real time—which is voice mail. With the computer, there is real time video teleconferencing, and that's essentially what *Timbuktu* is all about. Then there's store-and-forward—in the telephone it's voice mail: you store the voice, and they hear it later. But in the computer, you can have a much richer set of data, which is store-and-forward text, or images, or voice, or movie sequences—that's essentially multimedia mail.

Our focus is—after you have standardized mail engines, like X.400 and so forth—well, then, what kinds of software applications would you want on top of that besides just ASCII—sending a memo around. The type of things we're working on is, "How do you use the computer to talk to other people?" As opposed to, "How do you use the computer to talk to that 3090 in the basement?" When people talk to each other they prefer to use voice—thus all of our emphasis on voice and sound. And the way that people want to talk to each other is either in real time, in which case they're talking on the telephone and interacting live on the screen, or store-and-forward, in which case you would talk to the computer, but the other person would hear it later.

The MacRecorder product is sort of an initial product in the marketplace that deals with getting the sound in the computer, manipulating it, editing it—that kind of thing. There's three basic parts to it.

There's the hardware that gets the sound in. In other computers like the NeXT machine, you get the sound in and out without any additional hardware. In the case of the Macintosh, right now the initial hardware implementation of the MacRecorder is to make it simple, easy, cheap to get the sound in. But later, the way you may be getting the sound into the computer may be a telephone, or it may be an ISDN card. So the hardware may migrate along its own path.

Then there's an editor. You wouldn't consider doing an electronic mail system for ASCII if you couldn't edit the things you wrote after you typed them, and that's what *SoundEdit* is about. It's essentially a word processor for speech. It allows you to manipulate the speech message, or whatever it is, in the time domain. So it's an example of a time-domain editor. We're doing a lot of things with time domain editors—editors that deal with manipulating things that occur over time. Sound, or animation, or video—things of this nature.

Do you think people want to be able to use MacRecorder and have the sound come out to the people they're talking to at the other end as they speak—in real time?

No, because most everybody who has a computer also has a telephone. There's almost no one who doesn't—who has just a computer with no telephone. So we could take the sound, put it into the data channel, send it over the LAN, and then put it back as sound. But since you've already got a telephone, and a LAN, why not use the LAN for data and the telephone for the voice in a conference?. The only time that it makes sense to store the voice in the computer is if it's to be combined with something and forwarded on later. So, for the real-time conferencing, our focus is to talk on the telephone and conference either on the LAN, or on the modem connection.

The thing that confuses people about what we do is—they look at products that we're shipping today and they go, "Well, I don't understand. What does MacRecorder have to do with network plumbing anyway?" Essentially what our company is working on overall, is that we're trying to make the ideal front-end application for ISDN—which is a voice and data, telephone environment. And in ISDN you have two channels coming to your computer—one for voice and one for data; or both for voice; or both for data. We're trying to deal with the transition from analog phones plus LANs into ISDN.

I get that connection. I'm just not sure that I see how everything comes together into this ideal voice/network application. I see how MacRecorder and ScreenRecorder kind-of relate to each other...

Well, first of all, just to give you a bit of a feel for this....*PhoneEdit* is designed implicitly as a telephone and computer sharing the same cable going to the desk. The way the voice and the data interact at this point is, you have a PBX, which has extensions to people's desks and outside lines; modern ones have voicemail servers. And the LAN—the same thing, particularly with StarControllers and such. So you have extensions to people's desks—outside lines—which is *Timbuktu/Remote* or wide area networks, and email servers. We're interested in the coupling between the phone and the computer at this level, and the servers at this level. And then the LAN can be further subdivided into—this is the LocalTalk speed stuff, and the Ethernet speed stuff, and you can mix and match.

The other important thing about this is that PhoneNET, as wired with StarControllers, is exactly plug-swap compatible with ISDN. So that if you start out with the telephone and the computer wired to StarControllers, you can substitute ISDN terminal adapters—either a box on the wall, or built into the phone, or a card in the computer. The software is designed to work in this environment first, and then in the LAN environment second.

The way these things all fit together is that you're talking to another person independent of time and location. Same-time/same-place, that's desktop presentations, essentially. That's what we're doing now. There's stuff on the screen, but most of the content is verbal.

There's same-time/different-place—again, you're talking on the telephone and you're interacting on the screen, and most of the content is verbal.

We've talked to a lot of places that have these very fancy video teleconferencing conference rooms and so forth, with 13 cameras up in the ceiling and so on and so on. And after they've sort of gotten over the newness of it and used it for about six months,

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the way they actually use it on a day-to-day basis is they have one camera pointed at the screen and they all talk anonymously on one speakerphone. So, even though they have this very fancy setup, they prefer to just show the data to all the sites and talk. Because people would rather not appear themselves on the television screen. They would rather have the attention focused on the data, or what they're trying to show people, and their voice. Essentially that's what *Timbuktu* and the telephone are about.

If people instead used those fancy teleconferencing setups to pan across the room and photograph people as they were talking, would that then imply that your next step would be to synthesize some kind of video program?

Yes. We're quite interested in video. Video is another time-domain thing. There need to be editors for that. But you'll see things like that coming along.

Right now, to do full-motion video teleconferencing between sites, you have to do expensive compression on either side, and it requires a faster channel than is economically feasible for most places to afford. It's okay for Fortune 50 companies who want to link their 12 corporate offices, but it's not the sort of thing for the bulk of the world.

It's like the videophones that, in the early '70s, people predicted would be widespread ten years later.

Those things are starting to come into play. I don't know if you've seen these Matsushita and Sony [still-video phones] and so forth. There's one standard that's a little bit faster, 384 K-bit— that's coming. But to do full-motion color video from site to site requires essentially a T1 link. A T1 link costs $18,000 a month to go from any point to any other point. It's not the kind of thing you would set up for casual use. So there's the limitation of technology that's holding that stuff back.

But the other thing is that people don't want to appear in pictures. The social thing is what keeps it from happening, more than the technical, for this type of thing.

The Mac got its start as a sort of "outlaw" machine, and Apple still obviously cultivates this kind of image despite the fact that they're selling strongly into Fortune-level companies. How do you perceive that Apple has changed over the years? My perception is that a lot people are getting a little disgruntled with Apple's service, its high prices, etc.

Well, they're certainly improving the machines. That's the most important thing that they should do. People don't criticize Mercedes for having high prices, and they buy them anyway. They just have a particular positioning in the marketplace, where they are not trying to take over the marketplace, they're trying to be the best in the marketplace that they've chosen to stake out for themselves.

And keeping the high prices—well, yeah, I guess that makes it a little higher-priced machine. But basically the Macintosh is software that happens to be packaged in a box that is a computer.

Most of the value in the Macintosh has nothing to do with hardware—it's all the software. Apple is really a software company that masquerades as a hardware company, but they have a clever scheme of packaging their software in a way that it can't be pirated. As a third party to Apple in the marketplace, it's important to us that they keep the quality and consistency of their machines high. That's most important to us. It would be short-sighted and better for us if they dropped the price drastically, if there got to be way more of them out in the marketplace—it makes it a larger market. But in the long run, that's a bad strategy. It makes sense to say they're going to be focused and have a good quality thing and have a high standard that we can write to, as opposed to a large market, but a low standard.

I think their prospects are very good in that there's more Macintoshes out in the world than there are DOS machines that are capable of running OS/2 with Presentation Manager. To run that, you really need a 386 with at least four megs of RAM, with a large hard drive. And, you know, there's not that many DOS machines out there that have that capability.

So I think their prospects are very good, and to have add-ons to them is a good market. Our focus is a little bit different from those who do direct add-ons to the Macintosh, say, such as Radius, who basically does things that Apple has to do some day, but they do them today. Our focus is a little bit more on—how does that computer connect to other stuff?

On the plumbing side, that's the way we're doing things having to do with standards. So, the Ethernet, PhoneNET stuff is standard IEEE, 10 BASE T, telephone wire Ethernet standard. It's 802.3 standard so DEC equipment and Sun equipment and NeXT equipment and all these other things can easily run over that protocol.

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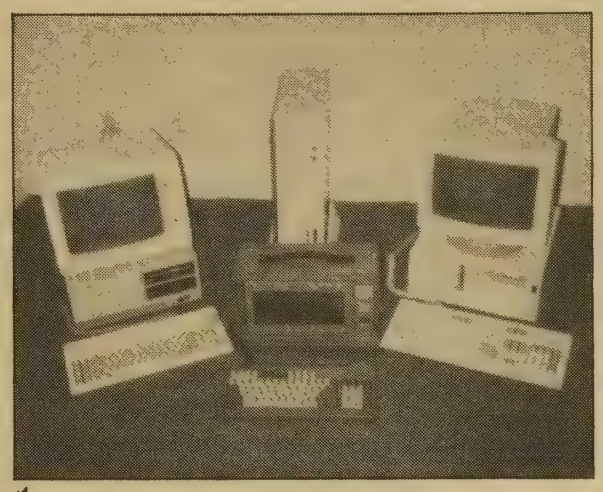

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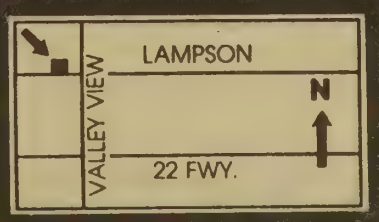

Has that brought up any conflicts between you and them?

Not per se. Apple's a CPU company, and they have to have sort of everything, soup-to-nuts, because some types of customers want to buy all Apple.

But it takes a lot of work to do what we do. Network plumbing is kind of grunge work that a lot of people don't want to do, and we're quite happy to do it—it's our focus. And as long as Apple feels confident that we will make sure that the network plumbing works well, it sells more Macintoshes. So as long as we help Apple sell more Macintoshes, they'll continue to have a good relationship with us. They've been very supportive and helpful.

Can you talk about Apple's multimedia binge—what it means? Do you think Apple knows what it means?

Well, I think Apple is trying to highlight the differentiation of the Macintosh from other platforms, and one of the things the Macintosh does way better than anything else is multimedia. Trying to do some of the things that are quite straightforward on the Macintosh on another platform is very difficult. So I think that is a wise marketing move, to differentiate things in that way.

Our view of what's important about multimedia is different, I think, from mainstream Apple. Multimedia, in our company's view should be a little bit more low-end for more people—like more business applications. In multimedia you tend to get attracted to the sexiness of these really high-end types of applications where you need $10,000 in add-in cards and videodisk players and all this fancy animation stuff that's so impossible to use that there are maybe 50 people in the world who know how to use it. Our focus is on ease of use, or multimedia for lawyers, or accountants, or whatever, less on production value *a la* Lucasfilm or Disney or Warner. Although our products are useful in that area, our focus is on business applications for multimedia.

There's another assumption that multimedia means creating things to go on videotape, or onto TV, for that matter. Our feeling about multimedia is that you create something that is an electronic mail piece that never leaves the computer. It goes over the network like normal mail and it's watched on the other person's screen. That's multimedia.

I talked to a multimedia developer who went to Apple's recent conference and was really disappointed. He didn't feel that Apple really knew what multimedia was, or how to use it, and was very disappointed in the fact that Apple has a mini-company dedicated to multimedia, yet they had nothing to show at this conference.

"Multimedia" is like saying "computer." It's a vast and diverse area, and everybody's an expert.

Multimedia with videodisks, the stuff their Media Lab does, is very high-end stuff. And even if you have a really nice computer and a really nice videodisk and all this great software to coordinate it all together, it turns out that the work of creating multimedia is going out with the camera and collecting the material that you want to put on the thing. The technical aspects are 20% or less of the problem. So that's an area of multimedia that is much more dependent on good tools to help put it together than others.

There are a lot of people at Apple who do have the right view of what multimedia should be, as far as their positioning in it. But multimedia is not nearly so clear as to what it is as desktop publishing was.

And even that's still evolving.

Our view of desktop publishing is that it should be mail. And it should never hit paper.

Tell me about the NeXT machine and why you're developing for it.

The reason we like that machine is because it has a high lowest common denominator, in that it has built-in networking, it has built-in sound, and it has a consistent, high resolution graphical interface imaging model. So if you want to do things like *Timbuktu*, or these movies that we're doing, or voice annotated documents and mail, you know that if you send that person a voice narrated movie, they'll have the right hardware, software, RAM and display to hear it and see it. And they'll have the networking built in, so they'll know how to send it.

So in that regard it's a very appealing machine to us. It's a good machine to be on a network along with some Macintoshes and maybe some high-level IBM-type machines, where the marketplace is shifting from being just focused on boxes that are unconnected to things to focused on systems where everything is connected together. And the person chooses what they want to have on their desk based on the features that it has for them.

Ideally, two years from now, you'll be able to choose what's on your desk—whether it be a NeXT machine, or a Sun, or an IBM, or a Macintosh. And they'll all be relatively transparently connected together and have some kind of interoperability at that level. The subtleties of the way you interact with the computer will be more what you choose the different box for. But they'll all have standard networking; they'll be able to interact mail-wise; hopefully they'll all have audio capabilities so you

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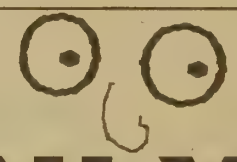

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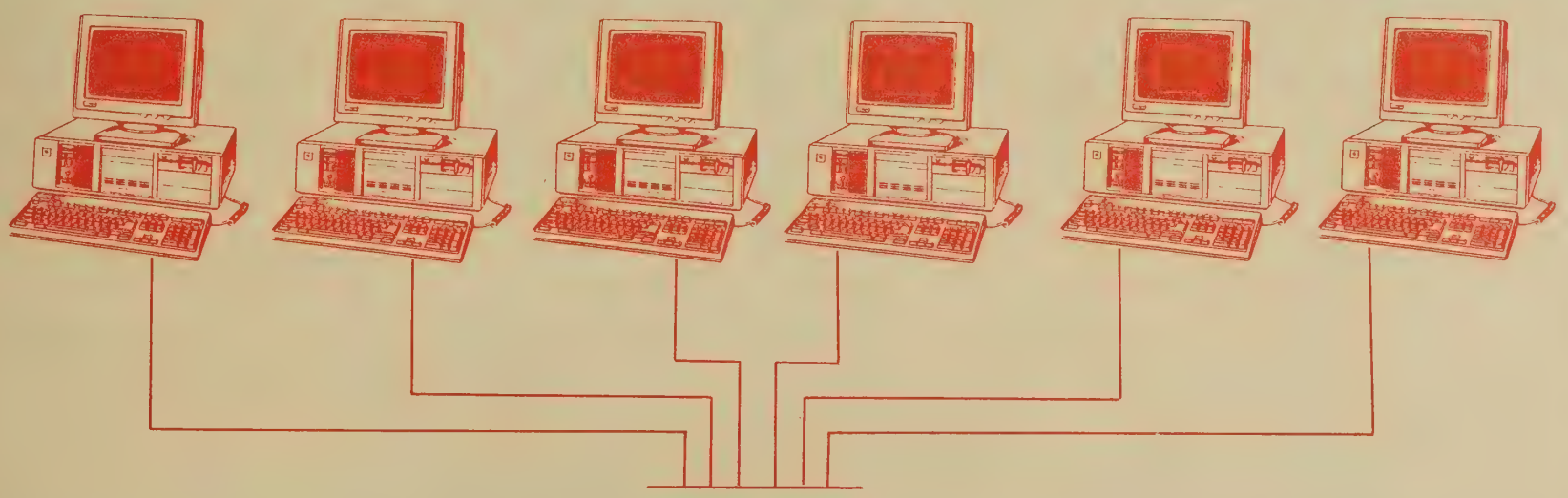

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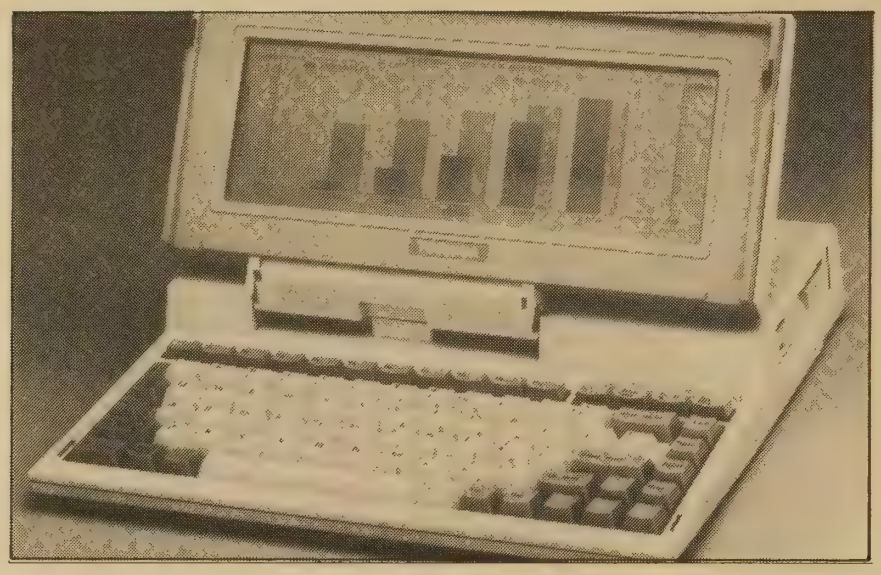
Toshiba's T1000 Revisited

Back To Basics With An Old Favorite

By Ed Kahn



With so many high-powered laptops coming on the market these days, we often lose sight of the original idea behind lightweight laptops. Beginning with the Radio Shack Model 100, computer users were able to take along a lightweight, bare-bones computer and transfer data back to a desktop machine. As powerful computers became smaller and smaller, manufacturers began to promote their portables as alternatives to desktop units.

After recently lugging an 18-pound powerhouse around the country, I recalled a good deal more clearly that my starting point had been to find a computer that I could conveniently take along as a satellite to my desktop monster.

Although I must say that my favorite all-time computer is still my old NEC 8201—the equivalent of the Model 100—I eventually gave it up because of its small display and less-than-100% compatibility with MS-DOS word processors. It seemed a lot easier to lug around a portable with a full screen display and the ability to run the same applications I was accustomed to running on my primary machine. Then, too, most of my portable work consisted of moving the machine in and out of my car.

But navigating through crowded airports gave me a whole new perspective. I was suddenly longing for the good old days of a four-pound portable, but spoiled by the full screen and other advantages of the newer machines.

In any case, my thoughts went back to Toshiba's workhorse portable that in many ways has taken the place of the old Model 100 and its cousins. As I took a closer look at the T1000, I was impressed by its light weight, ease of operation, and excellence of design.

The T1000: Still A Winner

This portable is unpretentious. It is designed to be used either as a stand-alone computer or in conjunction with a desktop. If it functions as your only computer it will do an admirable job. Although it is not to be compared to more powerful expensive units, it is so well designed that you will feel like you are using a much more elaborate computer.

The basic T1000, available at discount for about $750, comes with a single 3 1/2" disk drive. It is powered either by its internal battery or the included power supply that also recharges the battery.

But the design of the computer puts it in a class by itself. It weighs 6.4 pounds and has an LCD display without backlighting or anything fancy, but when you turn on the unit you will discover that it has both a built-in ROM chip containing all of the DOS files and a small non-volatile memory area that stores all of your startup files even when the unit is turned off. So time and date are retained, and you are ready to begin work at the familiar C> when you turn the unit on.

The 512 K of RAM that comes with the machine is adequate for many applications. Even though there is only one disk drive, it can serve as either the A or B drive. The result is that it is easy to copy individual files from one floppy to another. For all practical purposes, this little computer gives you much of the same flexibility you would have with a computer that has two drives. But there is more.

Toshiba has a whole list of user-installable options. The most important is a 768 K memory expansion card ($399). This additional memory is extremely flexible. Although there are a number of ways to use it, including assigning a portion as Lotus-Intel-Microsoft Expanded memory (LIM-EMS), the most powerful configuration for me was to assign 128 K to

After recently lugging an 18-pound powerhouse around the country, I recalled a good deal more clearly that my starting point had been to find a computer I could conveniently take along as a satellite to my desktop monster.

bring up the basic RAM to 640 K and then assign the remaining 640 K as a non-volatile hard RAM disk. This means that you have the equivalent of a 640 K hard disk. This RAM disk functions like a hard disk, but its memory will be lost if the computer is left unattended for more than a couple of months or you allow the rechargeable battery to run completely down.

I used the RAM disk to install a full *WordStar*, including spelling checker and thesaurus, so when I power up I have a computer that is ready to go to work writing. All I need is a floppy disk to hold data files. Even this information can be accommodated on the RAM disk as long as I don't intend to write a novel. Certainly it is adequate for whatever I might get done in a normal writing session. Back at my desktop system, I can move the files I have created off of the Toshiba T1000.

There are a number of possibilities for moving the data. Toshiba has a 360

Continued on page 150

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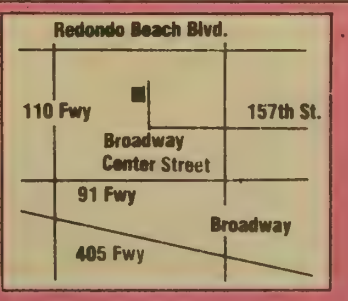

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K 5 1/4" disk drive available for a rather pricey $499. But they also have a clever Floppy Link card ($199) that is installed in the desktop machine and then connected to their portable. The result is that the T1000 thinks one of the floppy drives in the desktop is actually its second drive. If you work in conjunction with a desktop and need a 5 1/4" floppy drive, this may be the way to go.

There are actually a number of excellent products designed for transferring files between laptop and desktop units. The newest one to strike my fancy is *Fastwire II* ($99.95). It is super fast, especially when transfers are made through the parallel port. The product comes with either a serial or parallel cable—you have your choice—to connect the two computers. And you do not have to tell the program which ports are being connected—it automatically senses.

Another feature allows you to create batch files that will copy massive amounts of information between two computers. For instance, you can have it copy an entire hard disk complete with subdirectories. But what makes this really useful is the ability to exclude selected files or subdirectories from the transfer. This means I can copy my entire hard disk, but leave out the DOS subdirectory, config.sys, and autoexec.bat files, which will generally be different on each system I use.

The keyboard on the T1000 is compact, with 82 keys. An optional numeric keypad ($99) is available for users who find the embedded keypad too cumbersome. While not as nice to use as a larger keyboard, the included keys get the job done. The Toshiba keyboard does not have the kind of feel I like, but when it comes to keyboards, touch is really a matter of taste. To its credit, Toshiba has accommodated every function you need in the design. Even Function keys 11 and 12 are available through the use of the "Fn" key—a key that allows standard keys to serve a second function.

Included along with DOS on the ROM chip are several other programs that are necessary for using the T1000. Setup10 allows you to see how the system is configured and to make changes to suit your needs and options. The documentation walks you through every step to help you get the machine set up the way you want.

A number of other accessories will enable you to set up the Toshiba T1000 to do whatever you need. For some time there has been a 1200 baud internal modem ($299). They are now coming out with a 2400 baud model ($399). All of the accessories are user-installable. An automobile adapter ($59) allows you to operate the unit for extended periods from the cigarette lighter of a car. This unit will also recharge the internal battery, so it is convenient for someone who travels a lot by car and needs portability. The carrying case ($59) rounds out the list of options.

Toshiba has had this unit in its product line for several years; because it has consistently been a good seller, Toshiba continues to support it actively. New products like the 2400 baud modem show their continuing interest in this product. Likewise, they have made DOS 3.3 available for those who are running software products that require this more up-to-date operating system. If you choose this option, you will have to install it in either the hard RAM disk—if you have the extra memory card—or use it from a floppy.

The documentation that comes with the T1000 is designed to be simple enough so that the novice can use the machine, but contain enough information so that the more sophisticated user will not feel frustrated. But if you do run into problems, Toshiba has an 800 number that will connect you with courteous qualified technicians who will be able to help you. For the more sophisticated user they also operate an electronic bulletin board accessible through your computer if you have a modem. While this is not a toll free connection, the board contains helpful suggestions and even software that can be downloaded. This is a valuable resource for those who can access it.

If you need the fastest and most advanced portable on the block, this is not the machine for you. But if you want a reliable lightweight unit that will allow you to do work away from your primary machine, this may well be just what you are looking for. Its light weight and wonderful design make it a real contender. ■

Resources:

Toshiba T1000 $995.00 list price
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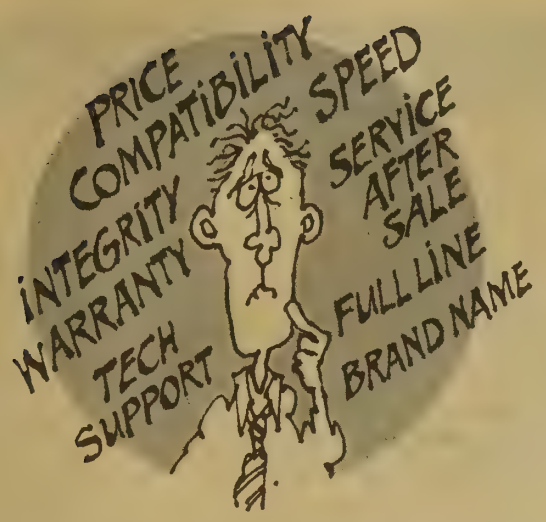

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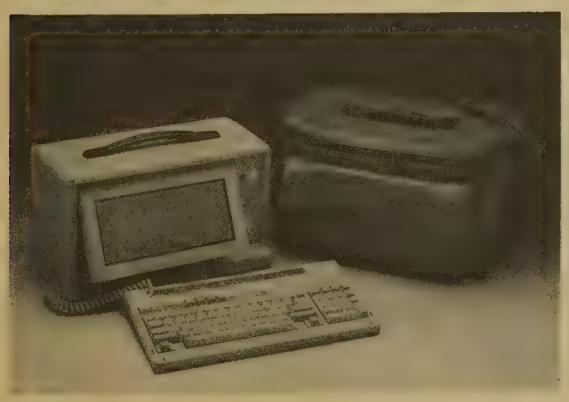

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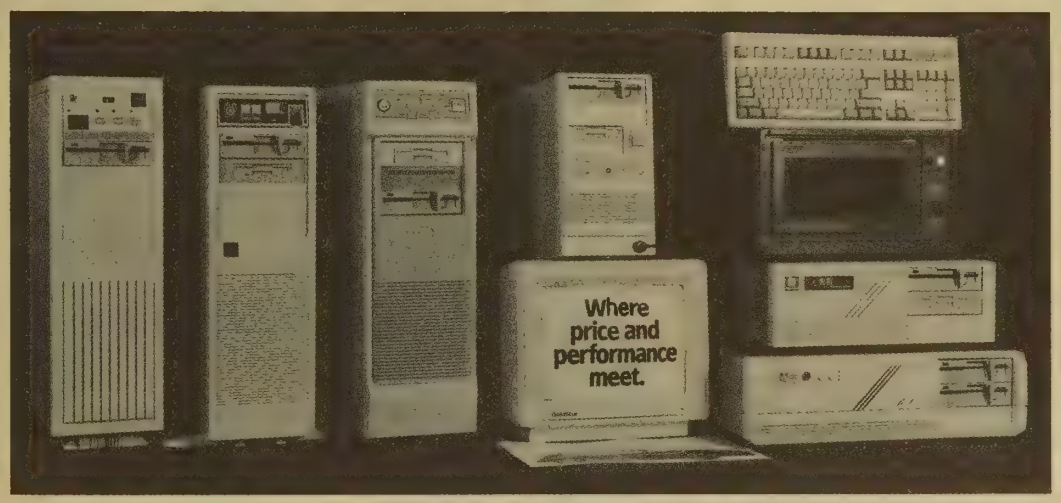

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Regis McKenna On The Post-IBM World

Changes, Opportunities, And Abundance Through Diversity

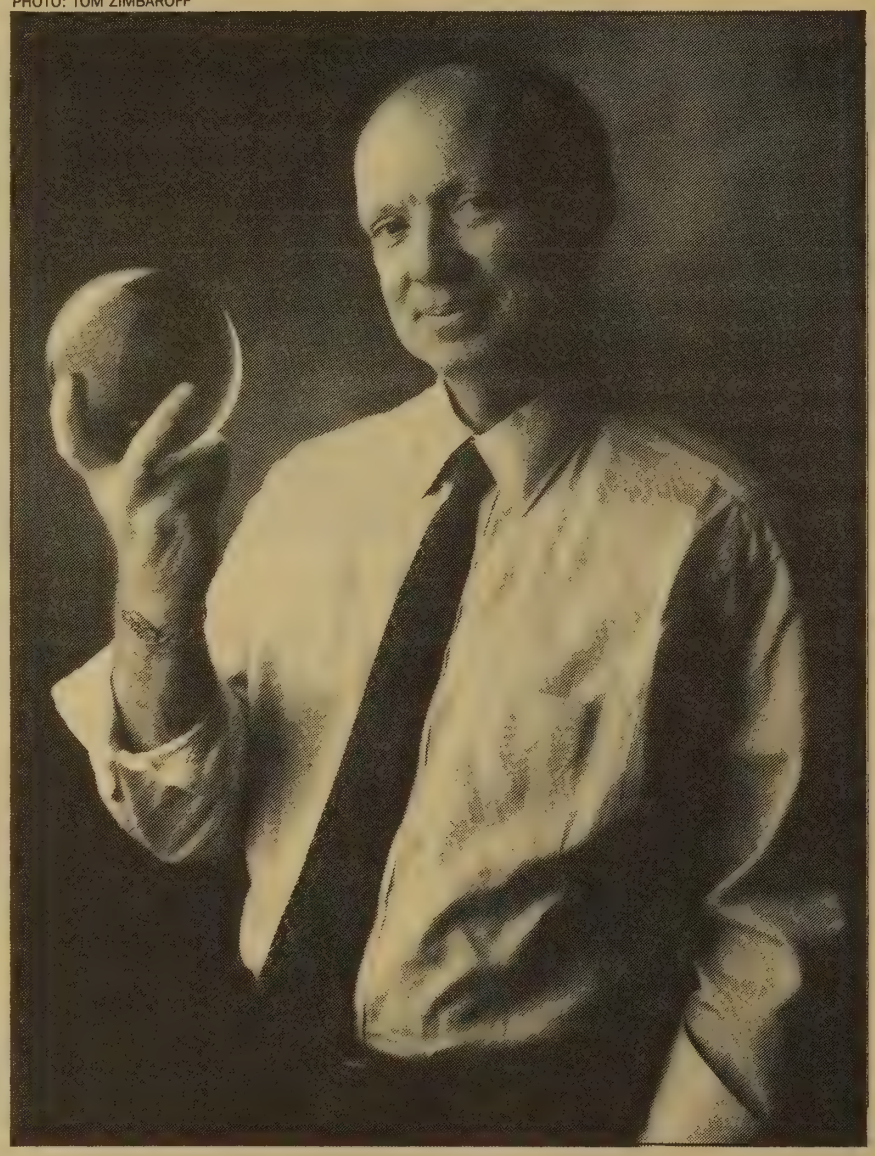
By Mary Eisenhart

When Regis McKenna talks, high tech listens. The chairman of the marketing consulting firm Regis McKenna, Inc. and a general partner of VC leaders Kleiner, Perkins, Caufield & Byers, he has been instrumental in the start-ups of some of high tech's most spectacularly successful companies. His unique perspective offers unusual behind-the-scenes insight into the forces shaping the industry—and what's ahead.

His latest book, *Who's Afraid Of Big Blue?* (Addison-Wesley, 1989, ISBN 0-201-15574-5) discusses the rise of IBM as a monolithic vendor, its success based on a all-encompassing strategy of proprietary solutions, and a campaign to be all things to its customers. It continues by analyzing the ways in which IBM became a victim of changing times and increasing diversity, its formerly-unchallenged supremacy eroded on all fronts by specialized start-ups from Cray, Tandem, and Amdahl to Compaq, Sun, and Apple. Looking into the future, McKenna examines the implications of an industry that's growing explosively at the same time it fragments into a seemingly-infinite number of niche markets, and looks at the new strategies required for success in such markets.

In a recent interview at his company's Palo Alto headquarters, McKenna elaborated on some of the topics in his book—the rise of diversity coupled with productivity increases, the fragmentation caused by the explosive growth of specialized markets, and the type of creative networking and innovative solutions required to keep all this from disintegrating into chaos.

PHOTO: TOM ZIMBAROFF



"Edison didn't go out and ask the world what he should invent. Bob Noyce didn't ask people if they needed an integrated circuit; he created the integrated circuit, and the integrated circuit then went out and found markets."

One of the central themes that runs through "Who's Afraid Of Big Blue?" is the dichotomy between a sales-driven company and a market-driven company, with IBM being firmly entrenched in the sales-driven camp. Could you explain that a little?

Well, this term market-driven is being used a great deal, and I'm not sure people really understand what it means. Somehow or other it connotes this idea of being closer to your customer, and therefore the customer's will and options and choices and decision-making influence what you make.

In technology businesses things work a little differently. Edison didn't go out and ask the world what he should invent. Bob Noyce didn't ask people if they needed an integrated circuit, he created the integrated circuit, and the integrated circuit then went out and found markets.

So in the technology business being market-driven has kind of a unique connotation. In the technology business, the technology moves almost in a life of its own—new things are discovered, science con-

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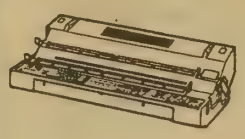

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tinually bubbles up into technology and creates new tools. It is when those tools touch the marketplace that they are accepted, rejected, or modified. So that an Apple computer, a Macintosh, comes out, and people start using it and they say, "We would like more memory. We would like a different kind of keyboard. We would like the back to come off so we can make more options. We'd like slots in it." It is in that adapting to the marketplace that you become market-driven.

So "market-driven" in a technology business means adaptability. And the faster you adapt—to your customers, to your markets—the more market-driven you become. When I use this in the context of the book—IBM started as the standard in mainframes. They created the standard, they created the products themselves. In a sense they were the people that told you what the solution to your problem was—even this idea that IBM people always understood your industry as well or better than the people they sold to. So they could go into the automobile company or the factory or whatever, and say, "This is what you need—our equipment. This is the kind of system you're going to use—it's our equipment. This is the kind of standard you use—it's our standard."

Well, as the technology grew, particularly from the bottom up, with the microprocessor and other types of adaptable, programmable-type devices, and through the use of largely programmable-type technology, companies could go in to users and say "Maybe I could fit what I have to suit your need." And people would say, "Well, we're a Blue shop. We're an IBM shop." And they would say, "Yeah, but we've got this very high speed..." and the guy would say, "Yeah, but we've got an IBM shop. What we need is to maybe put some pathway or gateway to IBM, even if I can use your product." So the company would say, "Sure, we'll do that."

So they were much more flexible and willing to adapt what they had to the customer's environment because they had to, and as a result it taught them to be more market-oriented. In other words, if Apple wanted to get into corporate America—remember, a few years ago the issue was "Can you put a DOS card in?" Apple said "Sure." Well, at one point they said no...

Steve Jobs said "It's against the religion..."

But then that changed, and when there was the ability to put a DOS card in, they started entering corporate America. Not that anybody *uses* that DOS card, or that a lot of people use it, it's that the customer wanted the option and the flexibility and the security.

But if you would ask IBM if they'd put a VMS [DEC's proprietary operating system] card to make it DEC-compatible into one of their computers, they would refuse to do that.

They're kicking and screaming about UNIX to this day...

That's right.

So what happened is that IBM developed this whole mentality. It's not just some conscious decision on their part, it's part of the whole way in which the corporation evolved through its leadership in mainframes—to think of kind of a monolithic approach to the marketplace in which we are the standard, we set the standard, customers listen to us.

And as a result the smaller guys trying to get in and grow the market had to become more flexible—in a sense, more market-driven.

Was part of IBM's success with this approach due to the fact that a lot of the markets it did business with were essentially monolithic themselves?

I think the market was monolithic, the products were monolithic, the applications were monolithic. You think about how the industry has changed in the last 20 years—at one point, when you said "the computer industry," you meant mainframes, because when you looked at a pie chart, 90% of that pie chart was mainframes. And most of that mainframe market was IBM, and maybe a handful of other companies. Today, if you looked at that same pie chart from a

"When there was the ability to put a DOS card in the Macintosh, Apple started entering corporate America. Not that anybody USES that DOS card, it's that the customer wanted the option and the flexibility and the security."

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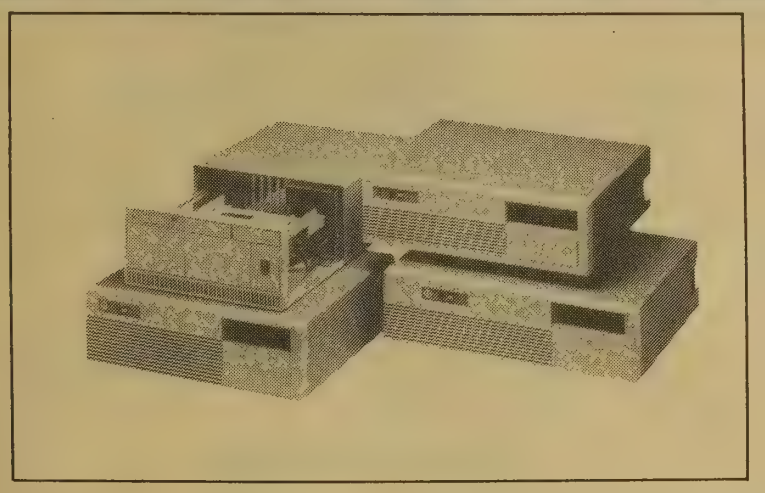

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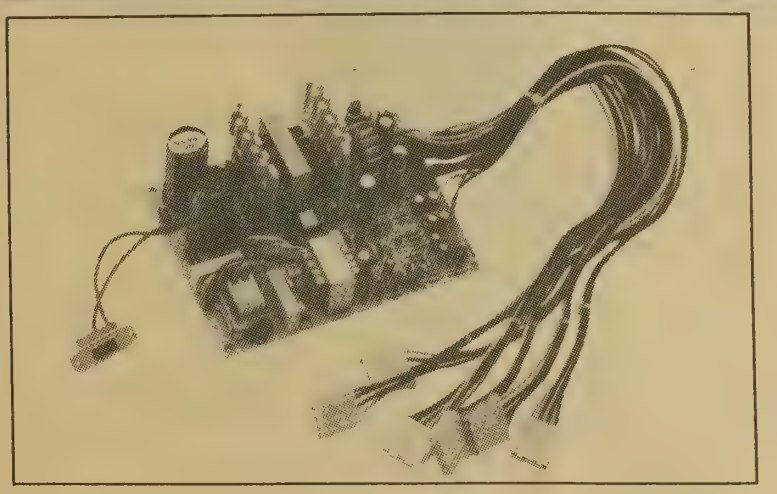

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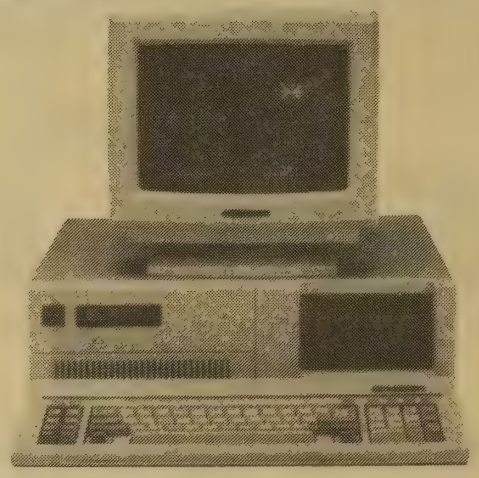

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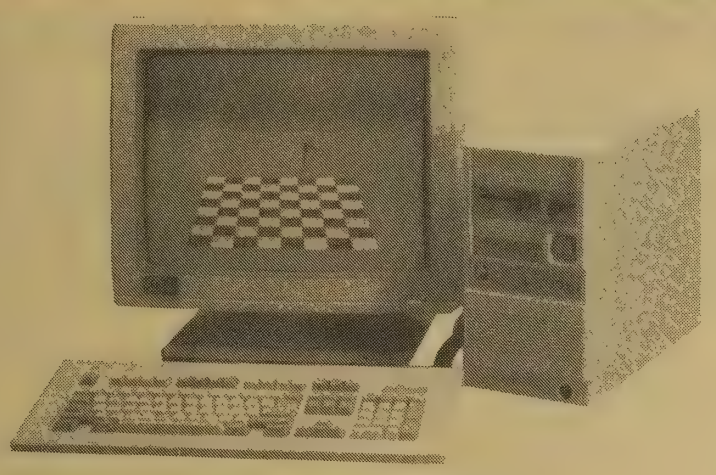

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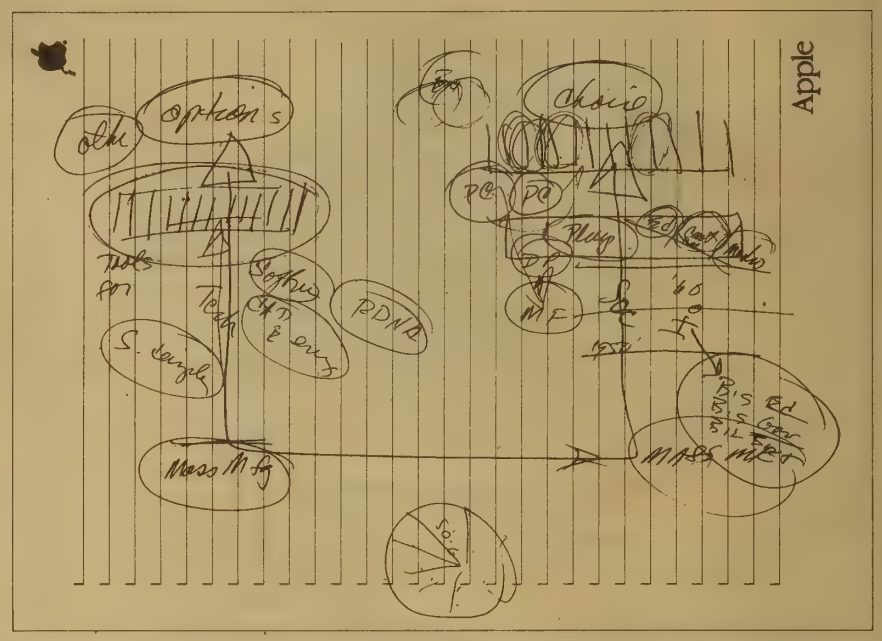

McKenna's version of the transition from abundance through uniformity in the Industrial Revolution to abundance through diversity and the plethora of options that await us in the future.

product standpoint, it's mainframes, and all kinds of mainframes. A Cray is a mainframe.

So you've got supercomputers, you've got mainframe computers, you've got minisupercomputers, you've got superminicomputers, you've got workstations, you've got laptops, you've got PCs—there's all these fragmented *types* of computers now.

Then you look at the marketplace, and the marketplace is no longer just the Fortune 500. My firm bought over $200,000 worth of computers last year. That's a lot of money expended for computers. And so firms that are relatively small are investing large amounts of money—we have a mainframe, we have a minicomputer, we have an HP 3000, and we have Macs. We have all kinds of computers, as a small firm.

So you start looking at markets—there's the government marketplace, there's the small business marketplace, there's the medical marketplace, there's the legal marketplace—because the software, the over 25,000 applications that you can buy out there today, can adapt the product to a variety of markets. And then a VAR system grows up to say, "I'm going to take that *just* into the medical market." or "I'm going to take that *just* into the legal market."

So now whole infrastructures of fractionalizing the marketplace are growing up. And they become experts in cutting the market up, and the flexibility of the platforms of the technology allows that to happen. IBM doesn't have control of that anymore; it's beyond them.

Did it ever?

Well, it did in the mainframe days because the marketplace was monolithic; the product, the technology, was monolithic.

But an Intel or a Motorola that sells a processor, they don't want to just sell to IBM, they want to sell to as many manufacturers of computers as possible. So you've got all these semiconductor people selling processors and RISC chips and everything else that are going to try to create more of a market for their chips, which is creating more computer-like vendors, and with more computer-like vendors, you start looking at the ability to create software. That whole new aura of technology, that whole new aura of infrastructure, is creating more fractional marketplaces to go after.

And if you're a big company with a monolithic approach, you can't go after all these little segments. It becomes too difficult. You can go after a piece of it, but you don't get all of it anymore.

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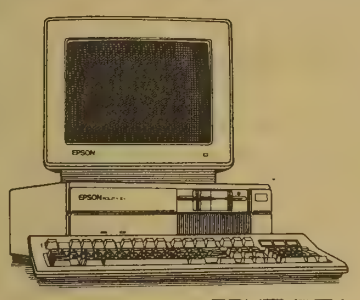

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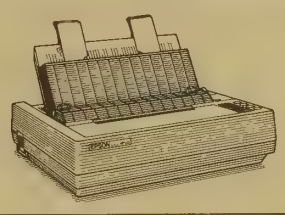
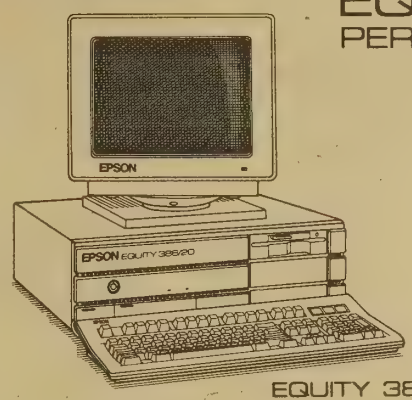


EQUITY™ 386/20 PERSONAL COMPUTER



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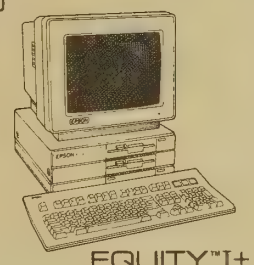

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EPSON® LQ-850 & LQ-1050

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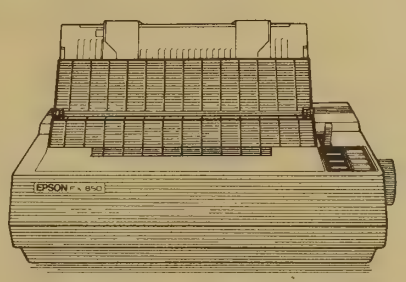
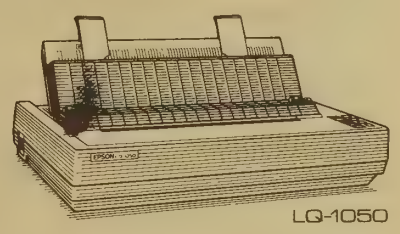


FX-850



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See, IBM could've gone into a Fortune 500 company or Fortune 1000 company and said, "We're going to help you get set up—we're going to provide you with the software, we're going to provide you with the hardware, and we're going to do the systems analysis as well." But today the systems analysis business is broken up—Arthur Andersen and Peat Marwick and other people are doing huge amounts of systems integration work. The software you can buy from a variety of sources, the hardware you can buy from a variety of sources, and the more standards are out there, the more potential there is to do multivendor environments.

So in a sense it's not IBM's fault. They've lost control of the marketplace, but the marketplace has been responsible for them losing control of it. The technology has created this more than IBM has.

You make the point that technology creates new markets instead of being essentially a commodity that existing markets pick up.

Yes. For example, prior to 1976, there was no personal computer market. No one had even thought that there would even be such a thing, until the 8-bit processor became truly a product, along with programmable memories and small disk drives. All that technology came together, and if it weren't there we would not have had the burgeoning marketplace.

I went back and looked at the prognostications of the research companies in 1978 for the personal computer industry in 1985. The most optimistic forecast was that it would be a $2 billion industry. It was more than $25 billion.

If you go back and talk to people like Bob Noyce in the early days of the semiconductor and the microprocessor, they saw it as helping this little application or this little application. The microprocessor was supposed to sell—when Intel first did it, they said, "Well, it'll help us sell memory." But in fact they've built a $2 billion company out of just microprocessors, and they got out of the memory business. It does sell a lot of memory, but not for them.

So the technology creates both the opportunity and the changing environment. It creates these markets—I suspect we'll see new markets arise. The market's not just sitting there waiting to be discovered, it's created by the influence of the technology itself.

"In a sense, the movement from mainframe to PC was very consistent with the evolution of our society."

The Macintosh is an example—it brought all kinds of people into computing who would never have gone near the stuff before, myself included...

Yes. And me. I used 'em, but not every day. Since the advent of the Mac, I use a computer every day, but certainly before that I used it maybe once a week.

And it seems like in the course of doing that, it loosened up the way people thought of computers. I don't think that the personal computer revolution has quite accomplished what a lot of the Homebrew Computer club guys wanted to do in terms of a sort of power-to-the-people grassroots movement, because the monoliths are gobbling up the personal computers faster than the guys in the garage are cranking them out...

Yeah, but it is doing some of that. It is changing the world in a very fundamental way. Even though the corporations have the purchasing power, even within the corporation itself it puts more power into the hands of the individuals. Think about how that control used to be from above, and now, at least, many people keep their own information on it. I've watched people go out the door carrying them here, bringing them in the next day, doing their own thing, developing their own graphics.

So it's putting a lot more knowledge and power within the hands of the individual, making them smarter, more efficient, feeling more accomplished. It's not the '60s revolution, but the '60s revolution did certainly create a whole new world in the sense of computing.

It did something else, and that is that it began the de-massification of technology and the applications of computers. You could say Apple's selling a lot, Sun's selling a lot, all these companies, but in a sense there is no mass market in computers anymore. As I mentioned before, you take a piece of software and take it into a particular service application, along with a service network to provide that and integrate it, and you now have, no longer a mass market, but a whole raft of niche markets.

We interviewed Larry Ellison of Oracle recently, and he says the personal computer isn't personal anymore—the whole idea with the personal computer is that you have YOUR information and you choose YOUR software and all that, and that's not the way the work environment is going. Everybody's got to be on the net. You want to be on our net, you need an Ethernet card. We're using the Oracle database, you've got to use Oracle. So it seems like in some ways the microcomputer environment is just turning into the mainframe environment writ small.

No, I don't think that's what's happening. Can I use your paper a second? [Takes tablet and starts drawing diagram] I don't think that's what's happening. I mean, they are certainly getting more and more powerful, but let me show you a paradigm that was the book I *really* wanted to write.

This [one side of the diagram] is the evolution of technology and this [the other side] is the evolution of society. We go back to the Industrial Revolution, when mass manufacturing created mass markets. If I could only make a blue widget, I had to get everybody to like blue widgets.

But it did more than that. If you go back and look at the influence of technology, mass manufacturing, on our society, we began modeling everything after mass manufacturing. Education—everybody went to the same school. Even uniforms—we dressed alike, everybody was taught the same things, we rehearsed things—everything became standardized, and so big education became part of the culture. Government, machine politics—government became organized and became like a business.

And of course all business, not just the manufacturing end of it, restructured—Sloan at General Motors has been the model of creating the boxes, neat, little, organized, hermetically sealed, so it's not a process anymore, it's pass-off. Islands. It was organized around the idea of everybody doing their job, and it didn't have to relate to the other person. It did ultimately at the end, but it was a discrete function that each person performed.

"An engineer can now design his chip, because he can buy a relatively low-cost workstation with the software to do it. He couldn't do that ten years ago. The tools weren't there. And what they're doing with these tools is creating more and more products to serve more and more needs."

So big education, big business, and big government were institutions that were established based on the way that our society evolved through this whole manufacturing process. In 1908 there was a play on Broadway called *The Melting Pot*, the idea that we will all come to America and become one monolithic society. All speaking the same language. All after the same pot of gold. All living in nice suburban homes. And so our mental concepts moved from having everything customized, where we built our own homes, we built our own furniture, into a mass mentality.

The 1950s were the prerequisite to change. In the 1950s, there were books—*The Man In The Gray Flannel Suit, The Organization Man, The Lonely Crowd,* all of Vance Packard's books about the hidden persuaders. And all of those books essentially pitted an individual against these institutions. It was always a battle between the big institution and the

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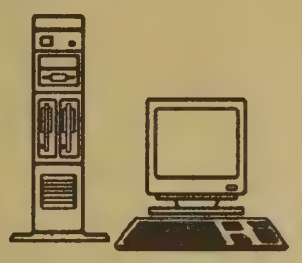

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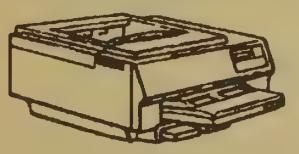

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problems the institution created and the individual's role.

The '60s essentially built on the internal workings of the '50s, and we saw the whole beginning of the rights movement. Out of civil rights came all of the protest movements, and they were all started by individuals. Not societies, not large groups, but small, usually one person, or a small group of people. Vietnam, Watergate, environmentalism, consumerism, all of these were small groups of people protesting this large influence of organizations on our environment, on our society, on our organizations. And so the '60s began to break up, just as the mainframe was here moving toward distributed processing, and eventually to the PC.

So we have ended up out of this with developing platforms for diversity. The platforms that have evolved through this period are largely three—education, the courts or the Constitution, and the media. Education, because our educational system from the '50s and '60s expanded rapidly to more and more people—the more educated you are, the more you feel that you can take on more issues, you feel more self-confident, you're more knowledgeable, so knowledge became the prime factor as it grew. You had to have a knowledgeable base out there in order to create individuality and diversity—and to buy computers. That began in the '50s after the war with the GI Bill—we sent huge numbers of people back to school and created that whole education rise.

The court system, which is based upon the whole rights movement—everything is rights, black rights, gay rights, animal rights, elderly people's rights. Rights is "I have my individuality as a citizen to participate in society to its full extent."

And the media. The media have essentially promulgated this, because a particular rights movement in one area of the country can usually see the media, and communicate in effect with a rights movement area on the other side of the country—when the Solidarity movement in Poland went on strike, so did the shipworkers in Chicago. They refused to load Eastern European ships. The media created that, allowed groups to essentially observe and see like movements and create a sense of identity.

But what this has created is a society that is almost infinitely fragmented. Each individual power group—I call them micro-majorities. The tobacco companies, the Moral Majority was a minority; Reagan was elected on 27% of the vote. Even the people who can get into power can do it with a small number of committed people.

But even more so—you look at Procter and Gamble and Sears and others, the problem they've gone through in the past ten years is that there are no more mass markets for anything. There's only individual niche markets. And so these mass producers have found they have to change.

But of course what happened was that the PC came along and helped create this individualized movement. It was part of it, it grew out of it. In a sense, the movement from mainframe to PC was very consistent with the evolution of our society.

Let's look at the technology side. Mass manufacturing went a long way—it went up through the '50s and into the '60s, but pretty much from the '60s onward, we started creating tools for diversity: software, computer-aided design and engineering, computer-aided everything. Recombinant DNA, silicon compilers—all of these are tools that allow you to create a solution for a very narrow segment of industry or society, that wasn't economically possible to do before.

So a chip designer can sit at Apple and design a chip using a Sun workstation—well, maybe not a Sun workstation (laughs), but somebody's workstation. The point is that an engineer who is a systems guy can now design his chip, because he can buy a relatively low-cost workstation with the software to do it. He couldn't do that ten years ago. The tools were not there. And what they're doing with these tools is creating more and more products to serve more and more needs.

The diversity of products—the fastest-growing category of products in almost all segments of our market today is owned by "other." Our supermarkets—we've gone in the last decade from 10,000 items on the shelf to 20,000 items on the shelf. The major market share ownership of personal computers is not IBM or Apple or Compaq—it's "other." Over 50% of the marketplace is owned by it, because the tools are there to get quickly into the business. So Zenith can jump into the business, provide a particular solution for government, and build a billion-dollar business almost overnight.

This happened in all areas. The largest market share of cookies is owned by "other." The largest share of film processing in this country is owned by "other." The largest share of bottled water is owned by "other." The largest share of jeans is owned by "other." The largest share of CMOS gate arrays is owned by "other." So as you look, "other" is a large category.

What's happened is that industry, through technology, is creating options. Lots of 'em. Society is teaching us that we have choice. What has

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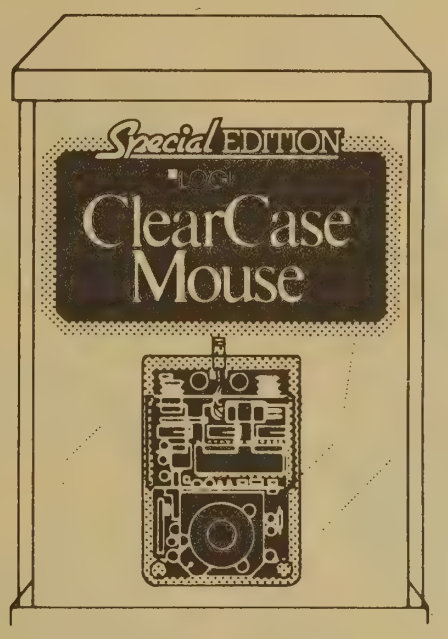

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happened isn't that we're moving toward the mainframe; the problem is, with all of this, how do you ever show any coherency?

Well, in society, you begin networking, right? The people who want environmental movements have found out that if they really want to get the environmental movements, they have to start working with people in certain industries. The semiconductor people, when they spun off and said "we want to fight Japan," they originally said, "we don't want to have anything to do with the automobile industry, don't want anything to do with the textile industry"—what they found out was we're all in this together. Even the guys in the semiconductor industry found that they have to cooperate.

And so networking is a social concept, a way of dealing with a fragmented society. It's not just a moving back to mainframes, it's a whole new way of cooperation that we *must* do, or, I'll tell you, we can't survive. 'Cause you cannot have all of these fragmented groups continually exerting their own autonomy in a democratic society. You get nothing solved.

One of the things I really liked in the book was Scott McNealy's story about how they bring the client's engineers in and have them talk to the Sun engineers about what they want, and there are no marketroids in this loop at all—or that's just how they do marketing, without flim-flam and bullying.

Sure. Think about this. Think about the shorter and shorter product life cycles. How do you solve the problem of shorter product life cycles? Can you go the old route, the old mainframe model, the mass manufacturing model?

Well, here's the way it would work in the past. How do we design a product? Well, first of all we have to have a meeting with our design people. They come up with a design, the marketing people are then called in and told, "Here's what we think we can build." They then say, "Gee, we'll go out and talk to a few customers, do some market research." So they go out and do the market research.

They come back in. They then meet with engineering and they fight for six months. You finally come up with some tentative specs, and maybe you go out again, and maybe you just start doing it.

Finally it's coming along, and it's late, and it's late because the guys keep coming in and arguing every time they meet to change it, because the world is changing. And then when they get it done they've got to go out and educate their salesmen, to say "Here's what you've got to tell the customer." Then you've got to educate the customers. I mean, this took *years*.

Well, the technology here, these design tools, are creating faster and faster cycles. How do we compress this all, without networking? Without integrating the customer in some way back into the design process?

If I put a laptop computer in the hands of a salesman, and the salesman is able to go in before a customer and sit down, and not just take an order, but now start showing him systems and databases and start giving him information that I have acquired across the world—if I am able to communicate back to my plant through modems.... The guy says, "Look, I've got this kind of a problem," and the salesman can go into the database and help him—he's no longer a salesman, he's now helping integrate the customer back into the process of the design. He's integrating him back into the need to have this relationship, and the only way it's going to be able to do that is through technology. We're not going to be able to hire enough people who are smart enough to span that whole spectrum.

So this isn't going back to mainframe. That's the wrong way to think of it. This is going forward to create a more cooperative involvement in which the consumer and the manufacturer are getting closer together through the uses of technology. It's the only way we're going to solve this fragmentation problem, which the technology's creating. But the technology can also create the solution to that. ■

Next month: Implementing creative forms of cooperation, including the NeXT-Businessland agreement and other strategic alliances; survival tips for a changing world.

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MAC @ WORK

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Mac-PC Connectivity

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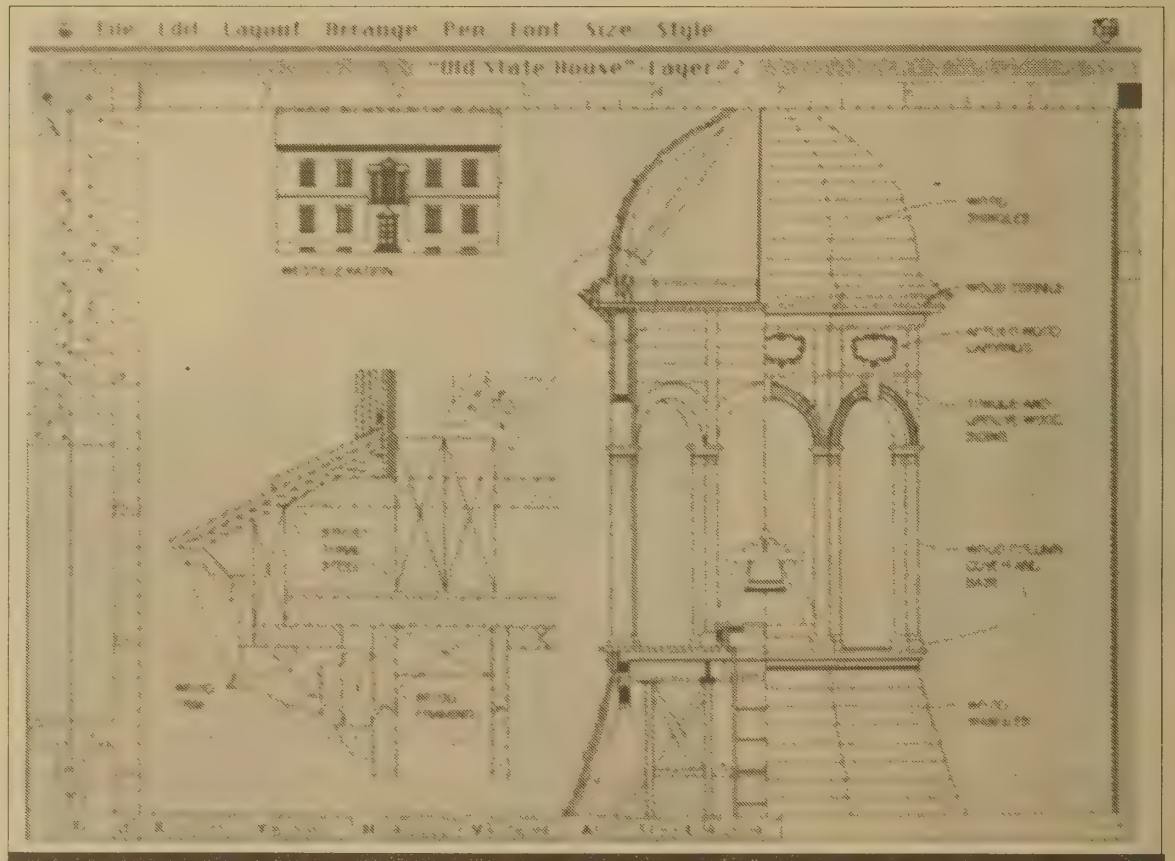
Claris CAD



A 2-D Drawing Program For The Macintosh

By Mike Markowitz

During the last quarter of 1988, our company evaluated a beta test version of *Claris CAD*, a new drawing program for the Macintosh. The first release version of the program arrived in March 1989. *Claris CAD* is essentially a superset of *MacDraw II*, adding many new features, but retaining total downward compatibility with *MacDraw II* drawings.

Claris CAD is a two-dimensional drafting tool, not a three-dimensional design tool. The distinction is subtle, but very important to understanding the role of the Macintosh in engineering, architecture, and related professions.

A designer needs to think in three dimensions, and this is very intense computationally. No Macintosh product, so far, can compete with the 3-D modeling software available on high-powered workstations. A drafter (or "draftsman"), on the other hand, must often express a three-dimensional design as a series of flat drawings ("blueprints") for production, tooling, assembly, and other phases of manufacture. Drafters work to very exacting rules that specify how a drawing must look.

One limitation of *MacDraw II* that made it unsuitable for professional drafting was the difficulty of creating objects to exact dimensions. It required a sharp eye and precise mouse control to draw a circle exactly 1.637 inches in diameter, centered on a particular point. *Claris CAD* provides a Location Bar, where you can type exact numerical specifications—the program then draws a new object (or modifies an existing one you have selected) to your

ABOVE: Claris CAD can be used to create detailed drawings and text explanations of their elements.

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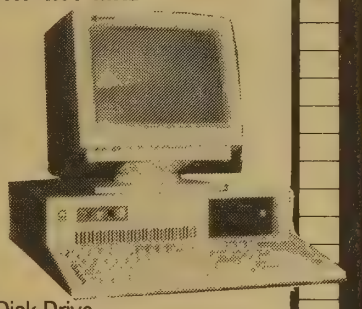

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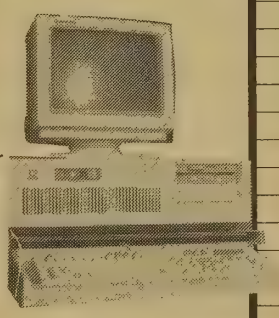

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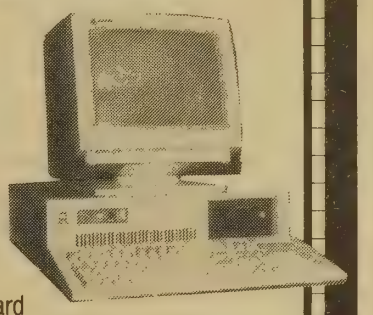

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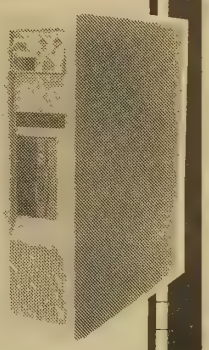

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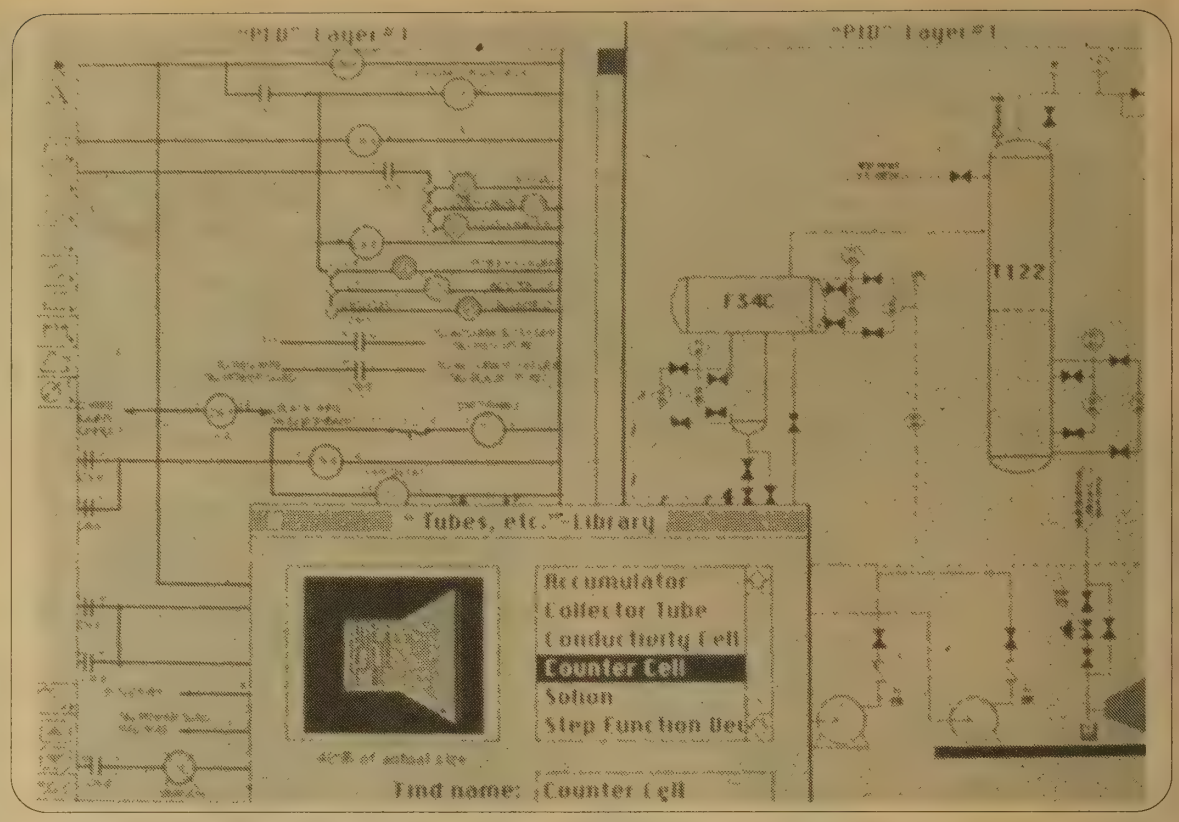
Claris CAD is essentially a superset of MacDraw II, adding many new features, but retaining total downward compatibility with MacDraw II drawings.

specifications. You can also call up an Info window to display the specifications for any selected object.

Other significant improvements over *MacDraw II* include a new kind of tool palette with "pull-out" options. There are tools for fillets and chamfers, regular polygons, concentric circles, and spline curves. Automatic dimensioning now includes linear, angular, radial, and diametral methods, and a tolerance can be included in the dimension. You can configure the program to use any of five international drafting standards: DIN, ISO, BS-308, ANSI, or JIS.

A new concept is the "tool modifier." This lets you snap a new line to the center of a circle, the corner of a polygon or the midpoint of a line (for example). Other modifiers create lines that are automatically parallel, perpendicular, or tangent. There is also a choice of "tool methods." In *MacDraw II* you could generally draw an object from corner to corner, or from the center outward. Depending on the particular type of object, *Claris CAD* adds several additional methods.



The program allows you to store frequently-used shapes and graphic elements in a library for efficient use.

Improved zoom controls let you specify an exact percentage of enlargement or reduction, or zoom in on a selected area of a drawing. The Duplicate command has been extended in ways that save a lot of labor: you can now duplicate groups to create precisely spaced rows, columns, or diagonals, and evenly spaced duplicates along an arc, or the circumference of a circle.

Polygons can now be smashed into their individual component lines. You can create sets of hatch patterns (used to show different materials) on a separate menu, apart from the regular fill pattern palette.

Unlike *MacDraw II*, *Claris CAD* is not limited to

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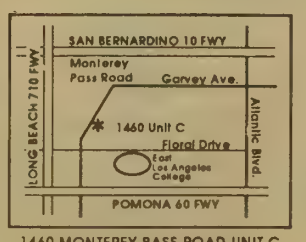

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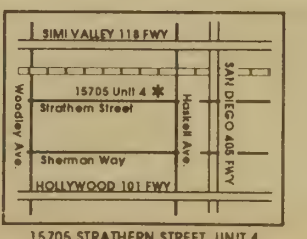

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eight basic colors (if you have a color monitor). You can still create "dithered" color patterns on a 8 X 8 matrix in order to fake blended colors or pastels. Color pen plotter drivers are provided for a variety of Hewlett-Packard and Houston Instruments plotters.

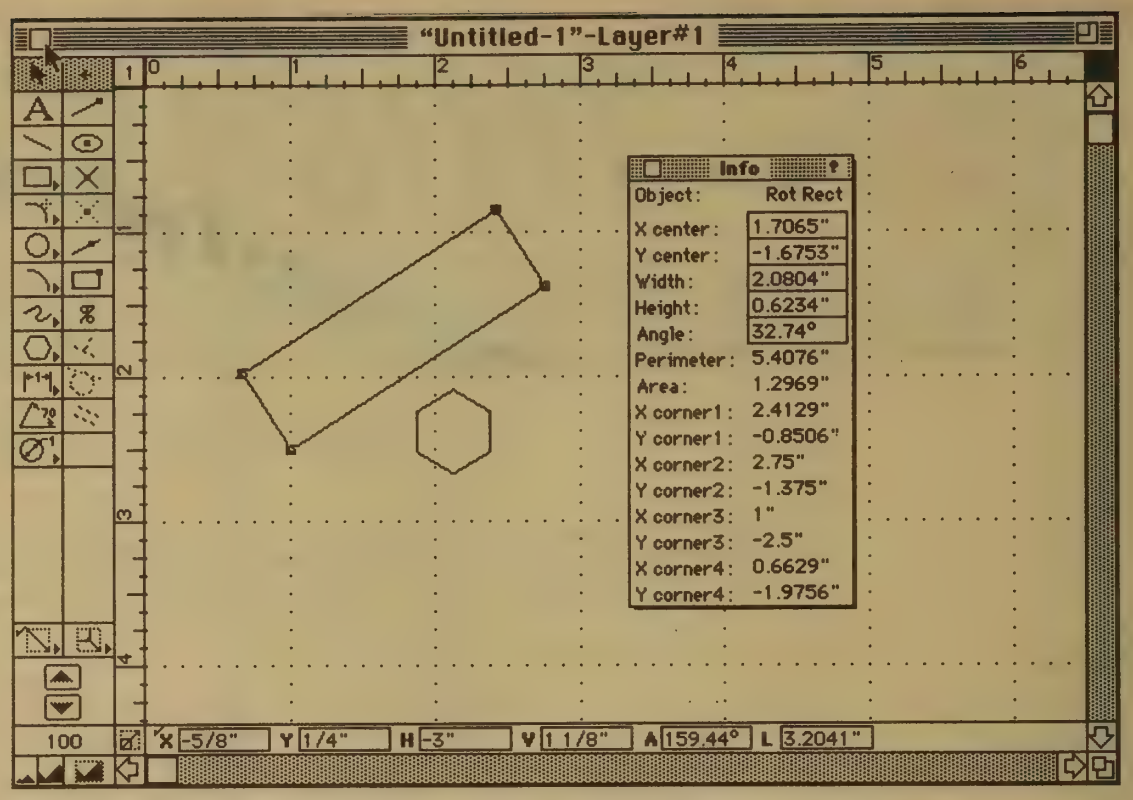
The documentation includes a comprehensive User's Guide, a "Getting Started" booklet, and a Tutorial Workbook. There are three 800 K disks in the package—Program, Utilities, and Tutorial.

Claris has promised to develop "translators" for converting *Claris CAD* documents into IGES, Genigraphics, and DXF formats for exchange with other computers. IGES is recognized by many mainframe and minicomputer CAD systems, while the DXF standard is used by *AutoCAD*. Rumored long-term future enhancements include 3-D solid modeling and surfaces.

To help new users get up and running, *Claris CAD* includes an instructional videotape (VHS format) that runs almost 48 minutes. After some initial marketing fluff, the video gets down to business and provides detailed, practical explanations of how the tools and menus work.

The program itself is very large, exceeding the capacity of one 800 K floppy. It runs on a Mac Plus, SE, or II. It would be quite impractical to use without a hard disk. For serious drafting, a large-screen monitor would be advisable.

With a list price of $799 (expect a street price around $550), *Claris CAD* is a serious investment. Upgrade cost for MacDraw II owners is only $399.



Claris CAD incorporates MacDraws tools into a sophisticated two-dimensional drafting package.

Any user with experience on a manual drafting board will find the *Claris CAD* environment much easier to use and far more productive than *MacDraw II*. Users experienced with *MacDraw* will be in Hog Heaven. If you have just been using *MacDraw II* for freehand or informal sketching, you don't need *Claris CAD*, but if you have to create precise dimensioned engineering drawings, this is the tool. Claris has obviously done good market research to determine the features that real users need, and the skillful implementation has not created a ponderous, feature-laden monster that slows the computer to a crawl. ■

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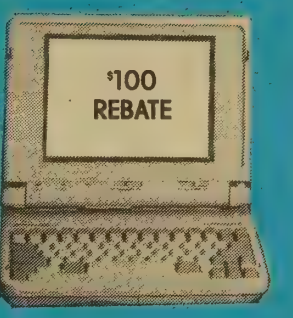

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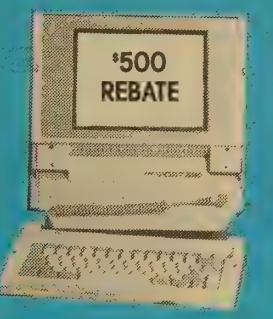

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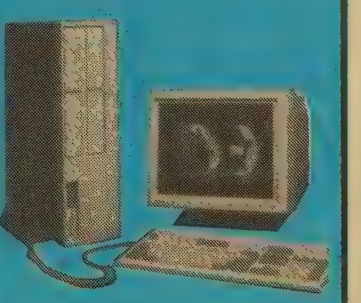

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MAC-PC CONNECTIVITY

BY ROBERT BEAUCHAMP

Microsoft Takes on WordPerfect

Word Leads Word Processor Grudge Match On Connectivity Points

The story goes that when WordPerfect first shipped version 5.0 of its word processor to an unsuspecting public, there were so many calls to its customer support line that callers couldn't get through. Not just to WordPerfect, that is; callers couldn't get through to *Orem, Utah*. An entire city cut off because of an upgrade.

Which emphasizes both the importance of new releases to loyal customers, and the problems and frustrations involved in releasing a new version of an old standby.

For some time now, the popularity of *WordPerfect* and *Word* for the PC has waxed, while that of such venerable products as *WordStar* and *Multimate* has waned. The two new powers are currently engaged in a kind of trench warfare on a scale not seen since the Germans eyed the French across Flanders' Fields.

It is truly a war of attrition, characterized by a "top this" progression of features. Microsoft's newest salvo, *Word* 5.0 for the PC, matches *WordPerfect* 5.0's innovative graphics features. However, *Word* goes *WordPerfect* one better by providing file compatibility with its sibling *Word* 4.0 for the Macintosh.

A conversation with Ruth Kurman, Product Manager for Microsoft *Word* on the Macintosh, provided insight into how Microsoft approaches the update question. It also provides a glimpse as to which word processor may win out in this duel. Kurman was previously the product manager for Microsoft *Word* for the PC, making her a good source for questions about the connectivity issue as well.

The biggest enhancement to *Word* 5.0 for the PC is its new graphics capabilities. These include a print preview function and the ability to import graphics files into your document.

Print preview lets you see what your document will look like when it's printed. This saves you from having to guess from your text screen what the appearance of headers, page numbering, charts, and graphics will be. You do need a graphics card and monitor to employ this feature, however. As with *WordPerfect,* you can't do any editing in this mode, you can only look at what you have. You need to go into text mode to make any changes.

Also like *WordPerfect*, *Word* 5.0 lets you import graphics files into your documents. While both applications let you import a wide variety of formats, *Word* scores a connectivity point here by allowing you to use the clipboard in *Windows* 2.0/286/386 to import your pictures into *Word*. *Word*'s documentation is also much more thorough in discussing the use of graphics in a document than *WordPerfect*'s. It provides helpful guidelines to page layout that might make you consider using *Word* alone for simple publications, rather than in conjunction with a page makeup program like *Ventura Publisher* or *PageMaker*.

Microsoft *Word* also lets you employ a mouse, unlike *WordPerfect*, making it easier to size graphics, highlight selections, and choose functions.

Like *WordPerfect*, *Word* offers a screen capture program allowing you to take "screen shots" and put them into your files. This feature is very useful to those documenting software.

If you're a Macintosh user, this all sounds like old news. Print preview? Putting graphics in text documents? Screen shots? A mouse? Are those very foundations of the Macintosh only now making it to the PC world?

However, there is also some news of interest to you in all this.

The New Word

Macintosh *Word*'s newest incarnation, 4.0, also has new and impressive functions. And what's best, it is file compatible with *Word* 5.0 for the PC.

This is where Ruth Kurman comes in. One of the many aspects of her job is ensuring file compatibility among all the varied versions of *Word*.

One of the most difficult tasks, as she describes it, is to make sure *Word* files are "... not only upward compatible (you can open a *Word* 3.0 document in 4.0) but downward compatible as well. Not to mention compatible between Macintosh and PC versions."

"Granted," she explains, "not all the features of a *Word* 4.0 document will be operable when you open it in 3.0. For example, a chart you made using *Word* 4.0's new table feature will look as it did in *Word* 4.0, but it will just be a new paragraph.

"However," she continues, "if you don't touch that table and move the file back into 4.0, *Word* remembers it is a table and it's just as if you never took it out of 4.0."

This is what's known as a commitment to connectivity. An important one when you consider, as Ruth says, "... that not everyone in a company is going to upgrade on the same day, especially if you have sites where 5,000 copies of *Word* are installed, as we have."

This contrasts greatly to WordPerfect's record on connectivity. *WordPerfect* did make files of *WordPerfect* 4.2 for the PC and 5.0 for the PC compatible. However, *WordPerfect* for the Mac is a different story.

WordPerfect for the Mac has been much ma-

The war of feature attrition will come to an end when one of the two contenders successfully puts a fully functional Word or WordPerfect in the Presentation Manager. With Excel, Adobe Illustrator, and a word processor one can finally envision never seeing the DOS prompt again.

Copyright © 1989 by Robert Beauchamp. All rights reserved. *Rob is a freelance journalist and documentation writer who resides in Minnesota and misses, sometimes, the lovely and crowded Bay Area.*

ligned by the press. To be fair, it should be noted that WordPerfect has issued an update, 1.0.2, that takes care of some problems. While it claims to have eliminated the annoying screen flicker, however, it has actually only reduced it. On my one-meg Mac Plus, there was still a slight flicker when you entered text. It may or may not be different on a machine with more memory.

WordPerfect also has included a radio style button that allows you to save your Mac files in *WordPerfect* 4.2 format. Notice you still can't save them in *WordPerfect* 5.0 format. Things don't get better coming from the other side either. In order to use a *WP* 5.0 file in *WP Mac,* you have to first save it in 4.2 format, then open it up on the Mac.

Toward the Future

Upgrades don't come cheap to the companies that issue them. Prices for an upgrade are determined more by tradition than actual costs. Today's recipients of upgrades expect a lot more as well. In fact, they pretty much expect all the manuals, templates, and other goodies that those who are paying full price get. Not to mention all the user support needed to get anxious users through the new features.

The strategy that companies take toward their upgrades, therefore, is going to become increasingly important.

Microsoft's plan, according to Kurman, is to use a core engine strategy. The "core engine" contains 80% of the application's functionality. The other 20% is context dependent. Therefore, when Microsoft issues a new version or ports a version over to another environment, most of the work is already done.

In the future this may be true not just of a single application, like a word processor, but of a whole range of applications, including spreadsheets, paint and planning, that come from the same core engine.

If this sounds familiar, it should. The concept is very closely linked to the idea of groupware. With groupware, everyone uses the same interface regardless of the type of computer they are using. A person on a PC can access information from a mainframe and not have to know anything about mainframes. A Macintosh user can sit down at a Sun workstation and get to work right away. No learning curve.

And if groupware requires a standard interface, such as the Mac interface emulated in Microsoft's *Windows* and the OS/2 Presentation Manager, *and* the best way to implement groupware is with the core engine strategy, you can begin to see this meandering dialectic come to its momentous collision.

The point of impact is the debut of *Word* or *WordPerfect* in an actual graphics interface in an actual graphics environment.

When are we going to see a major word processor, with full graphics capabilities and transparent file formats running in a *Windows* Presentation Manager window?

Macintosh Word's newest incarnation, 4.0, has new and impressive functions. And what's best, it is file compatible with Word 5.0 for the PC.

Putting a fully functional *Word* or *WordPerfect* in the Presentation Manager would be the equivalent of the advent of the blitzkrieg. The war of feature attrition will come to an end when one of the two contenders successfully makes this big leap.

It would also make the Presentation Manager a truly viable interface. With *Excel*, *Adobe Illustrator,* and a word processor one can finally envision never seeing the DOS prompt again.

Who'll win? Here's a clue: only one company owns a major word processor and *Windows* and OS/2. ■

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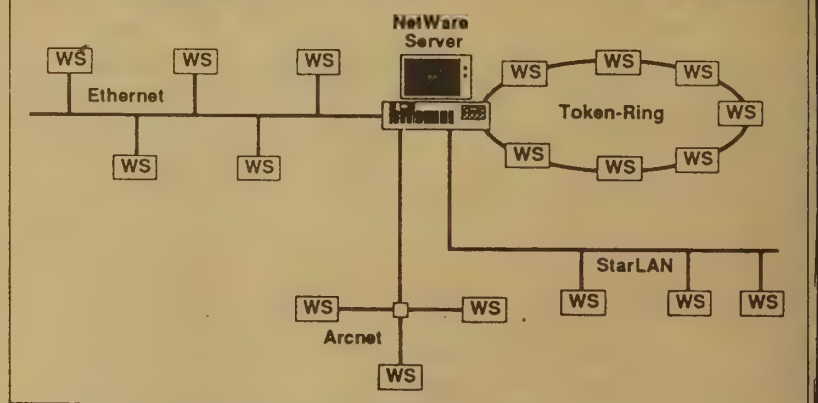

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BY BENNETT FALK

big N, little e, big W, big S

A PostScript-Based Approach To UNIX Windows

Don't get confused. When it's spelled in this funny way, NeWS has nothing to do with current events, the people who hang around with Huey Lewis, the "netnews" on USENET, or even the other big N, little e word NeXT.

No, NeWS is an acronym, and what it stands for is Network extensible Windowing System. That, in turn, is a creation of Sun Microsystems. NeWS is a software product and it does roughly the same kind of thing that MIT's X Windows does: it gives people using workstations a graphical user interface from which to run programs.

For both X Windows and NeWS, client/server communications are mediated through a network, which gives both systems remarkable flexibility: a single server may interact with client programs on various machines throughout the network.

Like X Windows, NeWS uses client/server architecture. The NeWS server is a program to drive the display on a workstation. It paints the workstation's screen and monitors the workstation's input devices, usually a keyboard and mouse. User input is passed on to the appropriate client program.

NeWS clients, like their X Windows counterparts, are application programs with no direct interface to the user (who is ostensibly running things). For both X Windows and NeWS, client/server communications are mediated through a network, typically one that is Ethernet-based, and this gives both systems remarkable flexibility: a single server may interact with client programs on various machines throughout the network.

NeWS also resembles X Windows in being a windowing system without a characteristic look or feel. Both systems provide an architecture for applications and a set of tools without dictating the appearance of the programs that use these facilities.

Unlike X Windows, NeWS manages the workstation display using PostScript, a language originally developed by Adobe Systems to control printers. To make PostScript work for a windowed display system, Sun Microsystems extended the language to manage devices that can talk back. (Interestingly, Sun's extended version of PostScript pre-dates Adobe's own Display PostScript.)

Because it is PostScript-based, NeWS enjoys several advantages over X Windows. Not the least of these advantages is that PostScript, through its "dictionary" feature, can become an object-oriented language, similar in many respects to Smalltalk. This not only simplifies the design and coding of interface tools, it has benefits at run time as well.

Once display objects, like windows or menu bars, have been defined, the details of putting these objects on the screen can be left to the NeWS server. The client program is freed from having to know the display characteristics of the workstation on which it is projecting a user interface. The client can manipulate the display with relatively few instructions, leaving low-level operations to the server. Consequently, NeWS client programs should be able to exploit advances in graphics hardware and display technology with relative ease.

Being PostScript-driven, the NeWS server has a cleaner bootstrap procedure than does X Windows. When a NeWS server is started, it looks for initialization files that contain the PostScript source code

NeWS is eminently portable to other computers because it is not kernel-based, it uses PostScript, and it can be easily adapted to different graphics hardware. The system has already been ported to workstations from various manufacturers.

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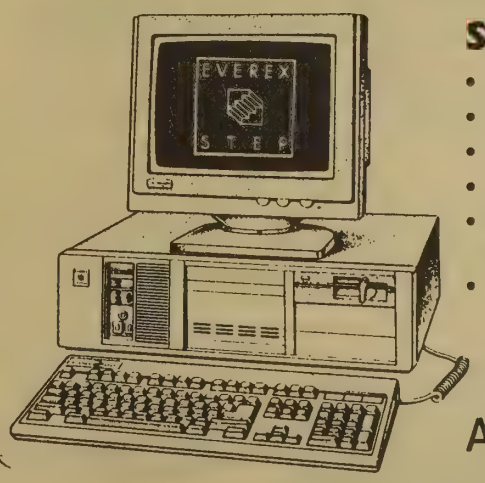

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from which the server sets up the NeWS display before any client programs have been started. One of Sun's extensions to PostScript allows the server to create UNIX processes, and thus start client programs.

NeWS On The Mac

While NeWS is certainly a Sun product, it shouldn't be dismissed as just another computer manufacturer's proprietary windowing stuff. Indeed, the system is eminently portable to other computers simply because it is not kernel-based, it uses PostScript, and it can be easily adapted to different graphics hardware. The system has already been ported to workstations from various manufacturers, including Silicon Graphics. Recently the Grasshopper Group (212 Clayton Street, San Francisco, CA 94117, 415/668-5998) ported NeWS to A/UX (Apple's implementation of UNIX for the Mac II).

The Grasshopper's product is called *MacNews*, and it may not be the kind of thing people flock to the stores in droves to buy (what UNIX product is?), but it is a very interesting product. *MacNews* consists of a NeWS server, a window manager written in PostScript, a number of client programs with source code, and supporting utilities. The window manager may be used as is, customized, or replaced entirely.

Quite apart from the merits of NeWS as a windowing system, MacNews demonstrates the viability of NeWS on computers other than those made by Sun. By current workstation standards, the Mac II is a modest machine, and yet MacNews performs well.

Quite apart from the merits of NeWS as a windowing system, *MacNews* demonstrates the viability of NeWS on computers other than those made by Sun. By current workstation standards, the Mac II is a modest machine, and yet *MacNews* performs well. It also uses the A/UX interface "toolbox" for access to the Mac II's graphics capabilities, and it is refreshing to find that the toolbox is more than a gadget to simulate in the UNIX environment the single-user Macintosh's user interface.

MacNews should make the Mac II more versatile in networks where NeWS is already in use on other systems; for stand-alone installations, it should be relatively easy to port NeWS client programs to the Mac II.

A Mac II running A/UX and *MacNews* should be equipped with a minimum of 4 Mb of RAM. Additional memory doesn't hurt. The basic *MacNews* installation will take up about 5 Mb on disk. Also included with the package are various images and the source code for NeWS clients, which will take up and additional 3.4 Mb if installed.

MacNews is easy to install. If you run your Mac II as a stand-alone computer unattached to any network, it may be necessary to re-link the UNIX kernel to include the network facilities *MacNews* needs, but clear instructions for doing this are provided.

When ordering *MacNews*, be careful to specify the correct version of A/UX: with A/UX release 1.1, the toolbox changed considerably, and the version of *MacNews* created for A/UX release 1.0 will not run under A/UX 1.1.

For those who want to follow the news (and gossip and technical info and philosophy) about NeWS, USENET offers the comp.windows.news newsgroup. ■

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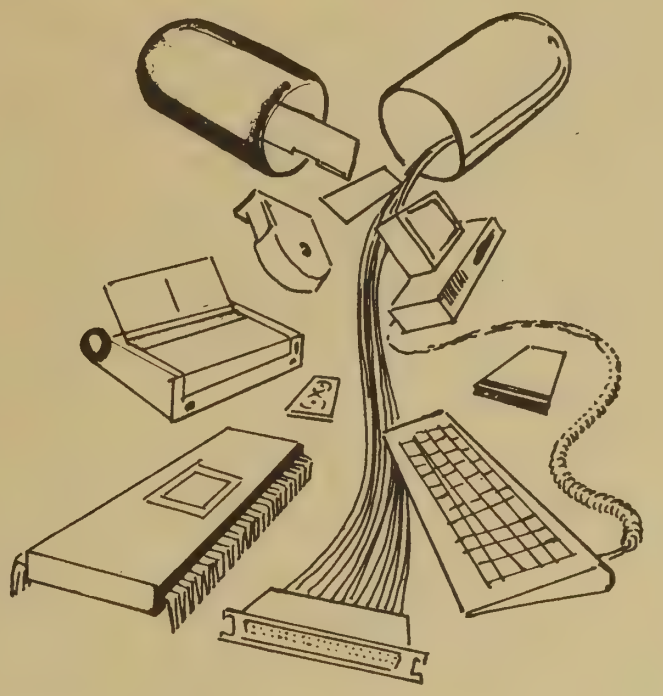

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LANs

BY WAYNE YACCO

Intro To LANs, Part One

If this is to be a column for readers who want to learn about local-area networks, as well as for those who are using them, then it seems appropriate to begin with a tutorial. There's certainly plenty to learn.

Basically, LANs connect devices and allow them to communicate and share data. There are many ways of describing LANs. In practice, every real LAN has its own organization, or architecture, which includes both physical and logical parts. However, a model devised by the International Standards Organization (ISO) is useful for describing LANs in general. Several LANs, including Apple's AppleTalk and the market leader for the IBM PC, Novell, have architectures that conform very closely to the ISO model. So we will begin by looking at the ISO-OSI (ISO-Open System Interconnection) reference model (Figure 1).

The ISO-OSI model outlines several protocols, which describe various interfaces between the hardware and software that make up a LAN. Actual LAN products will provide the functions described by the stack but implement each part differently from one another.

Physical Connections: Media

At the bottom of this protocol stack is the physical layer. The Physical layer corresponds to the way various media connect computers in a LAN. It specifies pinouts, voltages and cable connections, and controls transmissions.

The most common media in use are twisted-wire pairs and coaxial cable. An expensive, and consequently less common, alternative is fiber-optic cable. One or more of these media is used by Arcnet, Async, Ethernet, LocalTalk, SDLC, Token Ring, and T1. (LocalTalk refers to the media used by the AppleTalk network.)

Twisted-wire pairs are the thinly insulated wires used for telephone installations. Most buildings already have this medium in place, so establishing a network using spare pairs is very cost effective. However, the thin wire and limited insulation only allows this medium to work over relatively short distances without a type of signal enhancer called a repeater.

Coaxial cable, or co-ax, comes in two varieties: thin and thick. Thin co-ax is very much like the medium used for cable television. It consists of a single central conductor surrounded by a thick insulator, covered by a coaxial shield of woven wire or metalized Mylar (polyester) film, and finally encased in a protective outer insulator. The shield is connected to ground, and provides a high level of signal insulation. This type of medium is consequently able to conduct higher frequencies than twisted pairs and to provide a higher data transmission rate. It is fairly flexible and allows moderately easy installation.

Thick co-ax has a layered design very much like thin co-ax but it is more rigid due to heavier gauges used in its construction. The rigidity makes it significantly more difficult to install, but thick co-ax

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provides much more signal-carrying capacity or bandwidth. Longer runs of cable and more nodes, or workstations, can generally be supported on the network without repeating.

Fiber-optic cable consists of a bundle of extremely fine and very clear glass filaments encased in glass cladding and a tough outer sheath. It has the best performance characteristics of all.

There can be some performance trade-offs among the various media, but for similar transmission speeds, these generalizations are essentially true.

Connections to the LAN are made using interface controllers that typically plug into an expansion slot in a computer. Some controllers are designed to work through a port such as a SCSI (small computer system interface) or an IBM parallel-printer port.

Topology

A second aspect of physical protocol is the topology of the network. A topology refers to the arrangement of nodes and the connections between them. Several are common, including the bus, star, and ring.

The simplest topology is the bus. In this topology, all of the nodes are connected to a main conductor called the bus. Each node has access to all messages at essentially the same time. Addition or removal of nodes does not require interrupting the network. Unfortunately, this setup can also make it difficult to locate wiring faults. LocalTalk twisted pair and Ethernet coaxial cabling are usually arranged as a bus. It's a lot like Alaska Airlines running up and down the West Coast.

Star configurations such as SynOptics Communications's LattisNet twisted-pair Ethernet may not look like a pentagram, but every node is connected to a central control node. In this topology, messages must be routed through the hub. This design requires more cable per node, but expansion can be implemented without interruptions to the network. You can think of a star network as TWA, except that everyone's polite and you get the special meals you ordered. The hub is St. Louis, and New York and Chicago are nodes. Farallon Computing's StarController running on the twisted-pair PhoneNET medium can also be arranged as a star.

Networks configured as a ring form a closed loop that connects all nodes. Messages between nodes must be retransmitted by all intervening nodes. In this configuration, failure or disconnection of any node can bring the network down and faults can be difficult to find. However, it has the advantage of predictable response time. IBM's token ring network is the best known of the ring configurations. Think of this as a round trip across the country on Southwest Air. On Southwest, a round trip really goes all the way around and you get to visit every node.

Beyond Topology

Higher levels of the protocol stack are decreasingly hardware dependent.

The Data link Layer of the stack manages groups of data called packets. Packets are assembled for transmission and dissasembled at their destination.

The Network layer decides the route that packets will take through the network. Routing information is included in the packets.

The Transport layer controls the quality of transmissions with communication software protocols such as TCP, NetBEUI (IBM's transport protocol for DOS and OS/2), ATP (Apple transport protocol), and IPX/SPX (XNS transport).

The Session layer manages communications on the net and the dialog between users and multitasking system software.

The Presentation layer performs data conversion and facilitates its exchange. Environment managers such as *Windows* and *DESQview* fall into this category.

The Application layer provides the actual interface through which work is conducted and information exchanged. It consists of programs such as spreadsheets, word processors, and databases.

Stay Tuned...

Next month we'll conclude this tutorial with a look at some specific protocols, including some which do not conform to the ISO-OSI standard. We'll discuss the evolution of LANs from their recent beginings to today and take a look at Novell's new NetWare 386 version 3.0 and its protocol engine. ■

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Figure 1
ISO-OSI Model

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Session
Transport
Network
Data Link
Physical

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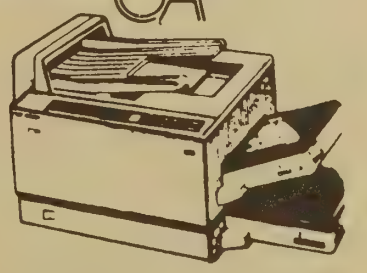

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BY MATTHEW LEEDS

Fine-Tuning The Amiga

Or: Son Of Flicker

It's no secret that the number-one use for all computers is word processing. The bad old days of typewriters, lift-off tape, whiteout, and retyping manuscripts are long gone. As a writer, I spend eight to ten hours a day using computers, either looking at new programs or writing. Creating the perfect writing environment is an ongoing project for me.

The native Topaz 8 font used by the Amiga leaves much to be desired. Aside from the fact that it is hard to read, it's too small. Simply selecting a larger sized font is not a good solution, as this cuts down on the number of lines of text that will fit on a screen at one time. Also, most word processors will only let you use the default screen font, normally Topaz 8. Running *SetFont* (a freely distributable program) lets me select a different font, but using anything other than an 8-pixel font confuses Workbench, and makes a mess of menus expecting an 8-pixel font.

Running word processing programs on an interlaced screen doubles the number of lines available for text, at least for those programs intelligent enough to recognize the larger screen. However, the interlace flicker makes working for more than a few minutes an impossibility. I had tried wearing sunglasses, putting smoked plexiglass in front of my monitor, and devising esoteric color combinations on the screen, all to no avail. The next step was to install a FlickerFixer.

The FlickerFixer is a specialized frame buffer for the A2000 that sits in the video card slot. It stores the two video fields, each with 262.5 lines and interlaced on the screen, and outputs a single video frame with a full 525 lines non-interlaced. To display this non-interlaced image requires a monitor that can handle a higher bandwidth signal. VGA or multi-scan monitors work just fine. I selected a Taxan 770+, a multi-scan monitor with some fancy features.

The Taxan not only handles the 31.5 KHz non-interlaced signal produced by the FlickerFixer board, it will also display the Amiga RGB signal (15.75 KHz), and a standard composite video signal. It also has separate adjustments for horizontal and vertical size and position for each of these signals. This keeps the image from jumping around the screen when I switch display modes. It also has a great overscan button that enlarges the screen

Copyright ©1989. All rights reserved. *Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.*

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image right to the edge of the screen if you don't set up the horizontal and vertical sizing from the presets.

My new monitor came with a 9-pin to 9-pin cable, perfect for the 9-pin connector on the FlickerFixer, but it was wired incorrectly. It turned out I had to switch two wires to get the monitor connected correctly to the FlickerFixer. Pulling apart a factory assembled shielded cable is not an easy task, and the wood burning tool I use for a soldering iron tends to have a deleterious effect on the tiny wires used in such cables. Eventually I was able to get the cable wired correctly and reassembled.

Reality Check

The first time I booted my Amiga with the FlickerFixer was a remarkable experience. Everything on the Workbench screen was twice as high as normal. I ran Preferences, selected an interlaced Workbench, and voila!—suddenly everything jumped to the top half of the screen. Stupid me, I had expected that AmigaDOS would be able to recognize that I was running in interlace and enlarge the icons and windows on-screen to take advantage of the extra space. This was only my first disappointment.

I had been in the habit of running an overscanned Workbench screen. The normal Workbench is 640 X 200. By using *MoreRows* (another freely distributable program) I had widened the Workbench screen by eight pixels, sufficient to leave room for 80 characters across and the borders that most programs wanted to impose on my display as well. This now left me running a 648 X 400 display.

There is no such thing as a free lunch. *MoreRows* may make it easy to steal space from the overscan border and use it as display space, but doing so increases the amount of time the Amiga needs to draw a horizontal line. This time has to be stolen from somewhere. Adding an interlaced screen to the display demand increases load on the display processors. Eventually it's possible to ask too much of the system. I found out what happens when you do.

The first symptom was that some screen hack programs like *Yaboing* looked very odd when run. *Yaboing* puts a bunch of bouncing Boing balls on the screen. When I ran it, one of the balls turned into a vertical bar of garbage on the screen. Then I began to have problems running some animation display programs. Taken to an extreme, this is the same problem that comes up when running a standard Amiga in high-res while trying to access a DMA hard drive like the 2090 controller. The villain was a loss of DMA cycles. The cure was absurdly simple.

When you run Preferences, there's a gadget in the middle of the screen used to center the display. Dragging the gadget around moves the image around on the screen. Generally you just center the image. It turns out, however, that the position of the image affects the number of free DMA cycles. The further to the left you position the image, the more DMA cycles disappear. Move it to the right and you free up DMA cycles. I moved the Preferences gadget to the right and the mangled *Yaboing* sprite reappeared. I then readjusted the horizontal positioning screw on the Taxan monitor to re-center the image, and was off and running.

Word Processing Meets Flicker-Free Video

The next step was to find a word processor that would take advantage of the additional real estate on my screen. I had been using *WordPerfect*, and

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had just about gotten used to its peculiar ideas of an Amiga interface, as well as its slow speed and multiple screen refreshes. The addition of a few well-constructed macros made it tolerable, but the first time I tried to use it with my new setup, it gave me a one-way ticket to the mystic show. I tried running it from the CLI with the -S flag to try resetting some parameters, but no luck. A call to their support line supplied the answer (which was unavailable in the manual). I had to delete a parameter storage file, then run the program.

WordPerfect let me run a full screen display, but it refused to support a font larger than eight pixels. Forty-eight lines of 8-pixel text is no fun. *Scribble* also refused to understand a font larger than eight pixels.

Excellence was out of the question as it runs even slower than *WordPerfect*, so I tried *ProWrite*. *ProWrite* supports an interlaced screen, lets you use any font you want, and even handles graphics, although I never add graphics to my documents. I ran *ProWrite*, loaded a document, and converted it to Topaz 11. It looked great.

Then I tried to scroll down a screen. Instant flicker. Hundreds of dollars' worth of hardware designed to eliminate any trace of flicker from my screen, and I find a word processing program that flickers anyway.

It turns out that *ProWrite*, an eight-color program, uses three bit planes. This is just simple math, 2 X 3. All three bit planes cannot be refreshed at the same time. The flicker is caused by the final bit plane being refreshed out of sync with the first two. Switching the text color from black to blue solves the problem, as it now gets refreshed along with the rest of the display.

Between the time I discovered the flicker in *ProWrite* and the arrival of the fix from their technical support, I received a review copy of *Transcript*, a new word processor from Gold Disk. *Transcript* is a bit of an odd beast. Imagine *Scribble* with most of the interface problems removed, or a text editor with some word processing functions thrown in. For me, the major attraction was that *Transcript* would support an interlaced screen and use an 11-pixel-high font.

Transcript has a lot of other great features as well; good spelling checker, macros, index creation, mail merge, auto-hyphenation, lots of customization possibilities—and it's fast. On the down side, it uses embedded formatting commands, doesn't have a thesaurus, and won't let you write a plain ASCII file if you've embedded formatting commands in a file. It uses the same commands as *Professional Page* for formatting, and has a special menu item that lets it send text directly to *ProPage* if it is running. I plan to use *Transcript* for a while to see whether it will be the word processor I use full time, but for now it's well worth a look. ■

Resources:

FlickerFixer
Microway
PO Box 79
Kingston, MA 02364

Taxan USA Corp.
161 Nortech Pkwy.
San Jose, CA 95134

MoreRows
Fish Disk #54
By Neil Katin and Jim Mackraz

Yaboing
Fish Disk #36
By Ali Ozer - based on a program by Leo Schwab

Word Perfect Corp.
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Orem, UT 84057

Scribble
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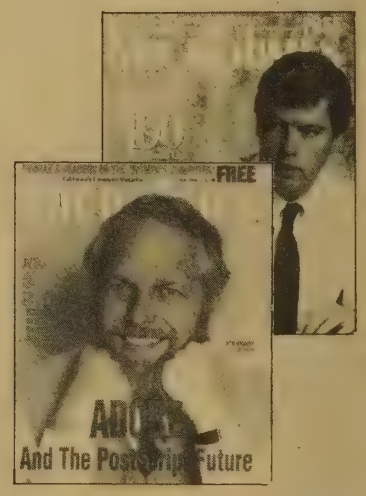

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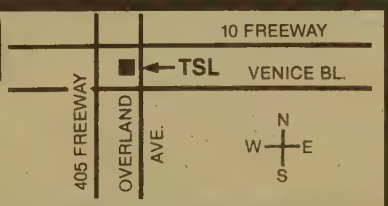

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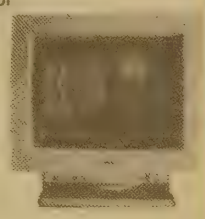

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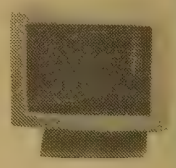

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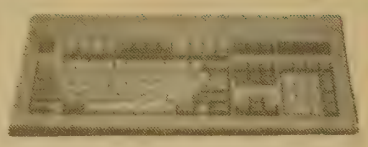

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BY MIKE MARKOWITZ

Apple's Video Overlay Card

Making An Old Workhorse Do New Tricks

Released on April 3, 1989, amid growing speculation about the demise of the Apple II series, the Video Overlay Card shows that Apple's engineers can still teach this old computer a few new tricks.

Video overlay is the mixing of computer graphics with standard video. The video source may be a videotape, videodisc, or video camera. The combined output can be displayed on one monitor, recorded, or broadcast. TV studios use video overlays for titles and special effects, but until recently this required expensive equipment and special skills.

The Commodore Amiga enjoys a near-monopoly on "desktop videos" made by creative artists on limited budgets. Professional interactive videodisc programs (for training or sales demonstrations) tend to use systems based on the PC-AT. By developing the Video Overlay Card, Apple can defend against the erosion of its educational market-share, and open up a new low-end market for creative and instructional video.

"The personal computer industry is in a wave of development aimed at seamlessly merging computer technology with sound and video technology—the most powerful communication medium that has emerged in recent times," said Bernard Gifford, Apple vice president of Education, at the time of the product's announcement. "The Apple II Video Overlay Card is a significant step in this direction. It provides a low-cost capability that greatly adds to the utility of the Apple II for communication and learning. Moreover, it extends the value of video and computer equipment and software that customers already own."

While under development, the card was reportedly known by the code name of "Roger Rabbit."

Just as desktop publishing made it easy for ordinary people to express their ideas with powerful graphics on paper, desktop video can make it easy for ordinary people to express their ideas with dynamic images and sound.

The Package

The Video Overlay Card (VOC) is designed to work with either an Apple IIe or a IIGS, using either a low-cost composite color monitor (which works with either system) or the more expensive Analog RGB monitor (for the IIGS only). The card goes in slot #3, with ribbon cables leading to connector blocks that screw onto the back panel of the computer. One block has a DB-15 connector that replaces the regular Analog RGB output of the IIGS. The other block has a pair of RCA jacks—"video in" and "video out." The screws that secure the connector blocks were too long, and required a lot of force to install. Otherwise, installation was simple. The user manual is illustrated in full color, and clearly explains some very technical concepts.

Like most Apple-made circuit cards, the VOC is a multi-layered electronic work of art, using the latest surface-mount technology. There are several custom VLSI chips (very large-scale integration). A mysterious, undocumented 14-pin connector (labeled J3) on the card is reportedly a video bus, for future third-party enhancements. There are nine variable resistors ("trim pots") sealed with dabs of paint, indicating precise calibration and adjustment before each card leaves the factory.

Two program disks are included in the package, providing the *Video Mix* software that makes the magic happen. A 3.5" disk for the Apple IIGS contains the latest GS-OS operating system, with *VideoMix* as a New Desk Accessory (NDA). A 5.25" disk, with the ProDOS 8 operating system, contains a small (17.5 Kb) separate *VideoMix* application program for use on the Apple IIe.

Copyright © 1989 by Mike Markowitz. All rights reserved.
Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computers since 1984. You can reach him on AppleLink (MOUSEKOWITZ) or The Source (SIG 060).

How It Works

The card detects an incoming video signal and synchronizes the Apple II's own free-running pulse-beat to the video's timing (this is called "genlocking"). The card actually duplicates the video circuitry of the Apple IIGS, including the Mega II and VGC chips. When there is no external video source, it simply passes the Apple's normal screen image along to the monitor. When there is a genlocked video signal, the card determines whether each pixel on the screen will be video, graphics, or some combination of the two. This determination is based on the current settings of the card, which can be manipulated by the *VideoMix* software.

To appreciate the neat trick that the Video Overlay Card performs, you need to understand how the Apple II handles color. The original Apple II can display 16 specific colors. The IIGS (in 320 X 200 "super hi-res" mode) can display any 16 colors drawn from a palette of 4096. In either case, the *VideoMix* software shows you 16 color swatches, and you can select one as the "key" color (sometimes called the chromakey). The default is black.

You have two seven-position "sliders" as controls. One regulates the transparency of the key color, and the other regulates the transparency of all the other colors on the screen. The key color defaults to completely transparent and the non-key colors default to completely opaque. The result is that any text or graphics in the non-key colors appear to float on top of a video background that replaces everything in the key color. You could easily create a video "window" in the middle of a computer-generated scene.

A separate function called Video Adjust lets you fine-tune the color and tint. The manual suggests using a video source with light-skinned people's faces, and adjusting for the most realistic flesh tones. The IIGS Analog RGB monitor lives up to its Sony Trinitron heritage, displaying brilliant, pure colors with clarity better than any TV set you ever saw. Even on a composite monitor, with or without an external video source, the VOC produces a noticeable improvement in display quality.

When the card receives input that meets the NTSC RS-170A specification (which defines technical requirements for legal broadcast video in North America and Japan), it produces NTSC-compatible output. Before this, Apple II video was not compatible with the NTSC standard—making it difficult to record directly from the computer's video output. The VOC is not compatible with the PAL and SECAM video standards used in Europe.

Performance

The biggest surprise of the Video Overlay Card (on the IIGS) was the restoration of the full screen area. The IIGS display normally leaves over a half inch of dead space all around the border of the screen. You

can set it to any color you want, but you cannot do anything with it.

Apparently this was done to avoid distortion of text and graphics at the edges of the screen. This distortion is not noticeable with motion video. So the Video Overlay Card can use the entire screen—at least for video; your computer graphics are still confined to the original IIGS image area.

The most noticeable shortcoming of the VOC is a persistent "jitter" or vibration of the overlaid computer graphics. According to the manual, this is an unavoidable result of the way the card synchronizes the different signals. It is worse with some color combinations, especially when you use thin line weights—you have to experiment to get the best results.

It should also be pointed out that the VOC is not a video digitizer (like the defunct AST VideoPlus card or Digital Vision's *ComputerEyes* for the IIGS). There is no direct way to capture or save the screen displays that you create, except by recording them on videotape. To get a decent video still frame image, you need a high-quality four-head VCR or a laser videodisc player. The VOC does not provide any audio capability—it simply passes the audio portion of the video signal through without alteration. To hear the sound track, you have to hook up your VCR to your stereo system.

The *VideoMix* software does not (by itself) provide any special effects such as moving windows, fades, wipes, or dissolves. If you want your final video image to fade to black, for example, you would have to stop your source and your VCR, bring up the *VideoMix* desk accessory, advance the slider one notch, close the desk accessory, record a few frames, and repeat this process six more times, with predictably jerky results.

Fortunately, several third-party software packages were announced simultaneously with the release of the VOC that *do* support special effects, including a new version of *Slide Shop* from Scholastic Software.

Even for schools or home hobbyists, a desktop video workstation represents a modest investment: an Apple IIGS, the VOC, and two VCRs, one of which might be an inexpensive playback-only unit. Software tools should include at least one paint program, an animation program, and perhaps a titling and special effects program, such as Brøderbund's *VCR Companion*. Be sure your paint program allows you to hide the menu bar and tool palettes, since you don't want them cluttering your output. You also have to be careful not to leave your mouse cursor in the middle of your image when recording. I got particularly good results using the VOC with Baudville's *8/16 Paint*.

According to the advertisements in last Sunday's paper, the cheapest video camcorders are now down around $700. The entry-level cost of desktop video is now not much more than the entry-level cost of desktop publishing. Just as desktop publishing made it easy for ordinary people to express their ideas with powerful graphics on paper, desktop video can make it easy for ordinary people to express their ideas with dynamic images and sound. Unless Apple manages to screw up this product with typically inept marketing and developer support, the VOC could be the critical link in a small revolution. It would not be difficult to build the functionality of this card directly into a future update of the IIGS motherboard, but the future of the entire Apple II product line does not look that bright right now...■

Products Mentioned

Apple II Video Overlay Card
List price: $549
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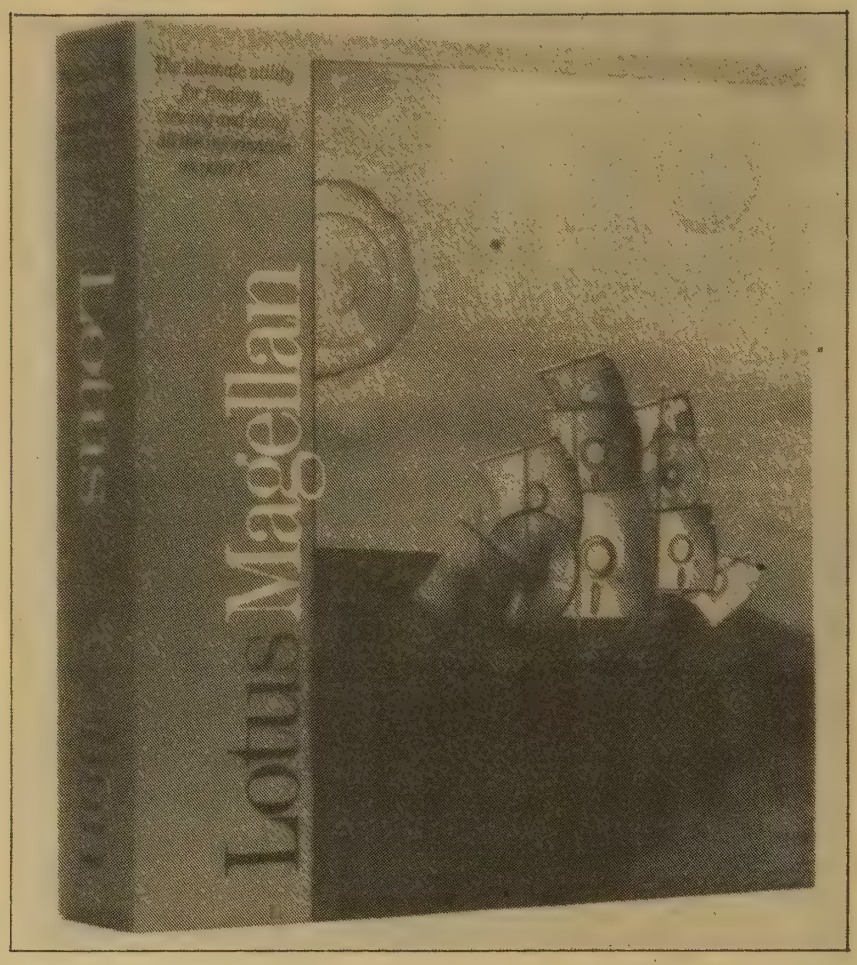

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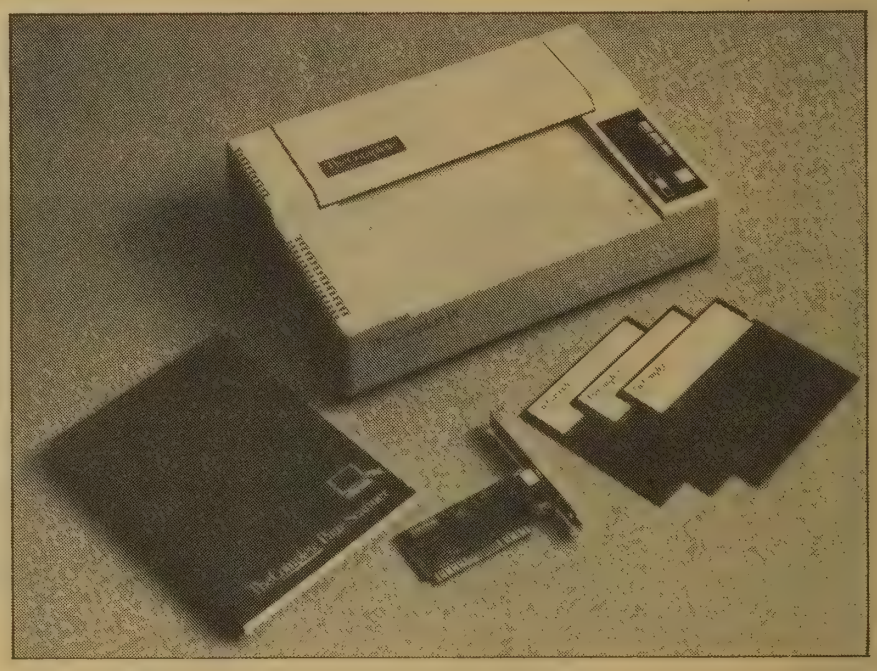
Lotus Development has started shipping *Lotus Magellan*, a new utility that finds, views, and uses information on a hard disk. With a single, consistent viewing environment, *Magellan* allows users to locate information stored anywhere on a hard disk by specifying concepts, phrases, or precise words. The user can instantly read, in native file format, the contents of all files created in most common application programs. Once the desired information is located, *Magellan* can launch directly into the application and automatically retrieve the file for editing. *Magellan* also provides means for manipulating information such as gathering portions of files from different applications into a single file. Besides allowing users to launch directly into any application on their PCs, *Magellan* reads all ASCII files stored on a hard disk and formatted files from the leading software packages. Initial applications supported by file format readers in *Magellan*'s viewing mode are: *Lotus 1-2-3*, *Lotus Symphony*, *Lotus Agenda*, *WordPerfect*, *IBM DisplayWrite*, *dBASE*, *Microsoft Word*, *WordStar*, and *MultiMate*. *Magellan* is available immediately for $139 through June 30. Beginning July 1, the retail price will be $195. Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142. (617)577-8500.



Complete PC Ships Low-cost Scanner

The Complete PC, Inc. has started shipping its new, low-cost scanner, The Complete Page Scanner. Page Scanner sells for $899 retail and comes with an interface card and SmartScan software. The user can crop, erase, rotate, scale, pixel edit, and convert scanned images to many different graphic formats including PCX, .MSP, .CUT, TIFF, .IMG, and facsimile. When used with The Complete Fax card, $399, the user can have a full-featured PC-based fax solution for less than the cost of most fax machines. *The Complete OCR/Page* is an optional software application giving The Complete Page Scanner full OCR capabilities. It sells for $495. The Complete PC, Inc., 521 Cottonwood Drive, Milpitas, CA 95035. (408)434-0145.

GRiD Introduces 386 Desktop

GRiD Systems has introduced the GRiD-DESK 386isx, a desktop computer featuring 80386 performance at a price comparable to 80286-based desktops. The GRiD-DESK is based on the Intel 80386sx microprocessor running at 16 MHz. It is available in Models 1, 40, and 80. A 1.44 Mb, 3.5" floppy drive is standard on the Model 1; a 40 Mb SCSI hard drive is standard on the Model 40; and an 80 Mb hard drive comes with the Model 80. Standard configuration of all models includes 1 Mb RAM expandable to 16 Mb, VGA graphics, five AT-compatible expansion slots, two dedicated memory slots, bi-directional parallel and RS232 serial ports, and a 200-watt power supply. The systems also support industry-standard AT Integrated Drive Electronics (IDE) SmartDrive storage technology devices. IDE frees up one card slot normally used by a hard drive controller card by integrating the controller on the motherboard. Options include a 16 MHz 80387sx math co-processor and 170 Mb and 344 Mb hard drives. Optional monitors include a 14" VGA monochrome monitor and a 12" VGA color monitor. ($2,795, $3,995, $4,495) GRiD Systems Corporation, 47211 Lakeview Blvd., Fremont, CA 94538. (415)656-4700.

Printer Sale

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Brother M1709 — Hi-speed 240 cps (50cps NLQ), 136 column, large 24K buffer. Unique push tractor with paper parking feature. List $749. . . . **Sale $379**

HR-20 — 22cps daisy printer, . $345
HR-40 — 40cps daisywheel printer w/ built-in sheet feeder. $595
M1724 — 24-pin head, 216cps. $549
M1109 — 100cps, 80 col. $169

EPSON

FX-850 — 264cps, 80 column . $369
FX-1050 — 164cps, 132 col.. . $535
LQ-850 — 24-in, 80 col. $549
LQ-1050 — 24-pin, 132 col . . $769

FUJITSU

Fujitsu 3400, 24-pin 132 column, 800 Hrs. life, color option . .$525

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Citizen 180D — 150cps, 80 col .$175
Citizen MSP-50, 300/50cps . . .$325
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Citizen Premium 35 daisywheel .$515
Citizen Tribute 224, 24-pin . . .$599

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Fortis DQ-4015 — the newest 24-pin printer from Fortis, 216 cps draft, 72cps NLQ. 132 col. Built-in push/pull tractor. List $949. **Intro special $525**

Fortis DX-21 — 22cps Daisywheel printer, 1 year warranty . . .$349
Fortis DX-41 — 40cps Daisywheel printer, 1 year warranty . . .$589
Fortis DM-1310 Printer, 130cps, 80 column. $225
Fortis DM-2010T Printer, 200cps, 80 column. $325
Fortis DM-2015T Printer, 200cps, 132 column $399

NEC

2200 —, 24-pin, 180cps, 80 col .$355
5200 — 24-pin, 265cps, 80 col .$565
5300 — 24-pin, 265cps, 132 col .$765

OKIDATA

320 — 300/100cps 80 col $365
321 — 300/100cps, 132 col . . .$479
390 — 270/90cps, 80 col. $479
391 — 270/90cps, 132 col $679
393 — 450/120cps, 132 col . . .$1099

PANASONIC

KX-P1180, 80 col. 192cps. . . .$189
KX-P1191, 80 col, 240cps. . . .$229
KX-P3151, daisywheel, 22cps. .$389
KX-P1124, 24-pin, 192cps. . . .$349
KX-P1524, 24-pin,192cps $549

STAR GEMINI

NX-1000 — 144cps, 80 col. . . .$189
NX-2400, 24 pin, 150cps $319

TOSHIBA

P311 ExpressWriter, 180. . . . .$389
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Toshiba P341-SL — 24-pin. . . .$645
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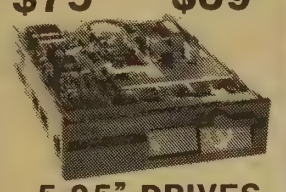

5.25" DRIVES

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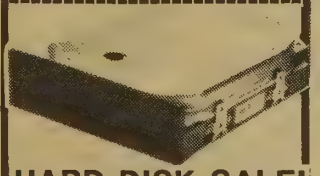

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Seagate 251, 40-MB hard disk only. $359
Micropolis 1325, 72-MB, 27ms hard disk only $599

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BROTHER HL-8 LASER PRINTER — 1 MB memory, 8 page/minute, 300x 300 dot resolution, 20 resident fonts. 16-character LCD display gives instruction to user, H-P compatible (same Canon engine as H-P) . $1,775

FORTIS PAGE PRINTER DP800 — 1.5 MB memory, 8 page/minute, 300x 300 dot resolution, H-P compatible, new Liquid Crystal Shutter technologywith fewer moving parts, greater reliability and sharper image . $1,575

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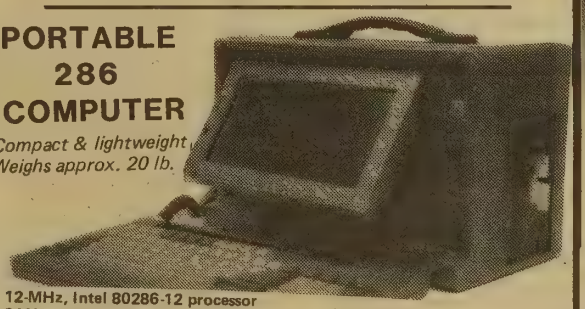

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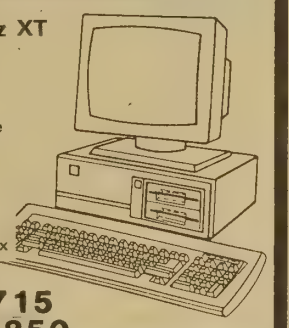

Special . . .$650
w/Amber monitor . . . **$715**
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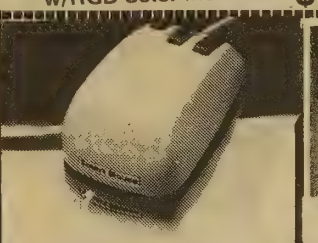

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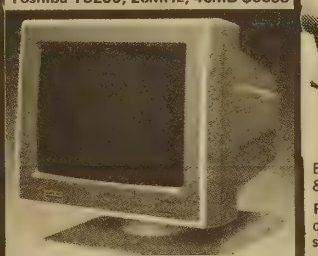
Toshiba T1200H, 1 dr, 20MB . $2195
Toshiba T1200HB, backlit. . . .$2250
Toshiba T1600, 12MHz, 20MB $3295
Toshiba T3100E, 20MB, EGA. .$2595
Toshiba T3200, 12MHz, 40MB $3450
Toshiba T5100, 16MHz, 40MB $4269
Toshiba T5200, 20MHz, 40MB $6395



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TVM M$-14 — 14" VGA. $399
TVM MG-11 — White multisyn . 195
Sony KV1311 RGB Color & TV $529
Sony XPD1320 VGA 720x400 .$525
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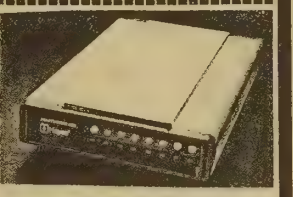
Goldstar 1210A 12" Amber . . . $79
Goldstar 14" EGA $359
Taxan 765 14" EGA Color . . .$395
Taxan 770 Multisyn Color $575



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Everex 1200 internal $85
Everex 2400 internal $159
Everex 2400 external. $189
Hayes 1200 external $275
Hayes 1200B internal w/Scom $275
Hayes 2400 external $415
Hayes 2400B internal w/Scom $415

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Hi-speed Color card w)par.port $49
Multi I/O & floppy controller . $55
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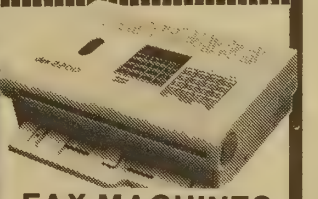
Parallel/serial I/O card for AT . $65
RS-232 serial card. $29
Parallel printer card $25
Multifunction memoryw/0K. . . $89
Hercules In-Color card $199
Intel Above board Plus. $425



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USER GROUP NETWORK

BY MARY EISENHART

News From Near And Far

Hello again, Southlanders! Here's the latest news on the greater LA user group scene from our faithful correspondents.

First, though, here's some info that might interest a few folks. A month or so ago in the northern California edition of this column, I passed along an inquiry by **Duane Peterson** of Concord who had bought a **Commodore PC clone** and hadn't felt too welcome at the local Commodore gatherings. He was looking for some groups that specialized in the Commodore clones; as an interim measure I steered him toward a few local PC groups.

Well, this month's mail brings a letter from **Joel M. Rubin** of San Francisco, and his news may be of interest to Commodore clone owners in southern California as well.

"Two of the old-line Commodore groups in Canada and England do maintain MS-DOS libraries. **Toronto Pet Users' Group, Inc. (TPUG)** is at 5334 Yonge St., Suite 116, Willowdale, Ontario M2M 6M2. Their phone number is (416)733-2933, and the office is open Monday to Friday, noon to 5 pm Eastern. US Associate membership costs US$25. Disks are $5-$10-$10-free (fourth disk of an order is free), which isn't that wonderful considering the huge number of sources of MS-DOS noncommercial software. Membership used to include a commercial magazine subscription with a special insert, but they are now sending out a newsletter and offering membership discounts on various commercial magazines. This may improve, as they just got over a crisis.

"**Independent Commodore Product Users, Ltd. (ICPUG)** has Mr. Jack Cohen as its membership secretary, and he is at 30 Brancaster Rd., Newbury Park, Ilford, Essex, England IG2 7EP. His day phone is 011-44-1-597-1229, and his evening phone is 011-44-1-346-0050. Overseas airmail membership is £26/year plus a one-time £1 share of stock in the co-op. To get a disk you send a disk, mailer, and sufficient British stamps or International Reply Coupons to send them back—no charge. Of course, since post offices charge about 2 1/2 times as much for an IRC as they give you if you redeem them, the postal charges can add up. Membership includes a thick, somewhat technical, semimonthly magazine that rarely has anything on MS-DOS. (It is, however, one of the better technical sources for other Commodore computers.) There are also member discounts, but since British prices tend to be higher to begin with..."

Joel also wonders whether Duane wouldn't be better off going to the local PC group, but in case any of you Commodore fans of whatever stripe feel like a little foreign cultural exchange, you might want to get in touch with one or both of these groups.

In other news: the **MacValley Users Group** will be having its July general meeting in the cafeteria of Burbank High School, Burbank Boulevard at Third Street in Burbank, 7:30 pm on Tuesday, July 18. Hayes will be on hand, presenting the latest version of its telecomm software *Smartcom*.

Stephen Brandt of Glendale writes to let us know that the **Foothill Computer Club**, a PC-oriented group, is going strong, holding its meetings on first Wednesdays at 6:30 pm at Glendale Federal, 2350 Honolulu, Montrose. At the request of Glendale Federal, which has been inundated lately with the group's mail, Stephen earnestly requests that all inquiries be directed to the group's post office box: PO Box 1265, La Cañada, CA 91011. If you'd rather use the phone, the number is (818)790-6672.

Bruce Ascough of **Valley West dBASE Users Group** reports that the group now has a new phone number: (818)789-0723. Meetings are still on third Mondays, 7 pm, at Blue Cross of California, 21555 Oxnard St. in Woodland Hills.

And finally, for a little bit of exotic BBSing, consider this little item from **Pete Perkins**, the director of M.R.T. Inc. in Tokyo. He's running a 24-hour BBS, **JANIS II** (03)255-8856, 1200/2400/9600HST. It includes several online magazines, movie reviews, online shopping, networked mail, CD-ROMs, and over 500 megs of downloads and info. Pete says there's no fee for using the board, but registration is required. So if you're in the neighborhood, or just checking the long distance lines, check out this board.

That's it for now—please keep that information flowing in our direction and we'll do our best to pass it along. US Mail goes to User Group Network, 5951 Canning Street, Oakland, CA 94609. Email can be sent to **microx** on The WELL (415/332-6106), **{pacbell, hplabs,ucbvax, apple}!well!microx** from Usenet, **MICROTIMES** on MacNET, and **bex754** on The Source. Faxes are also welcome: (415)652-4618 and (213)467-5486. ■

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Remote Bulletin Board (Singapore). (065) 445-1646. 9600/2400/1200 24 hrs. 218 MB Online (IBM upload/download). Sysop: Umar A. Rahman

203

Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS.(209) 239-9853, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 95 Mb online. Emphasis on programming. Uploads and downloads. No fee but registration required. Sysop: Kenneth Roach.

Oasis Software Library.(209), 823-2803, 300/1200/2400, 8-N-1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

Silicon Realms. (209) 754-5530. 300/(1200 Soon) 9:30AM to 6:30AM. Formerly Motherload 64. Commodore, PET & Plus/4. Programmers board, Continuing & Short Story boards, FRPG. Sysop: Joe Commodore

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The Backdoor BBS.(209), 952-9430, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS oriented board. Lots of software, online chess game, much more. Sysop: Randall Fox.

212

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213

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Beaver Creek. (213) 437-1410. 8-N-1 All but 4-9 PM. Sysop: John Campbell

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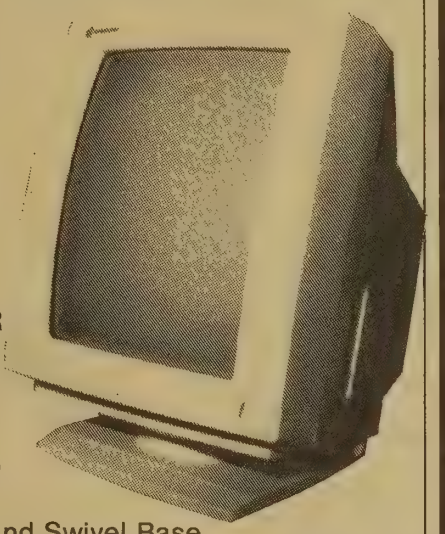

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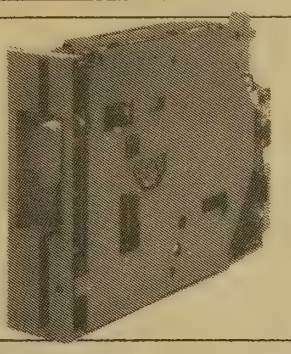

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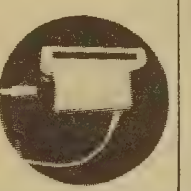

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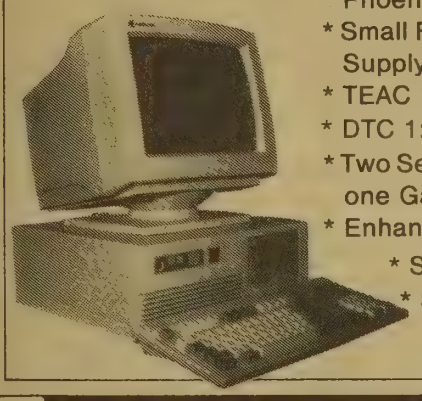

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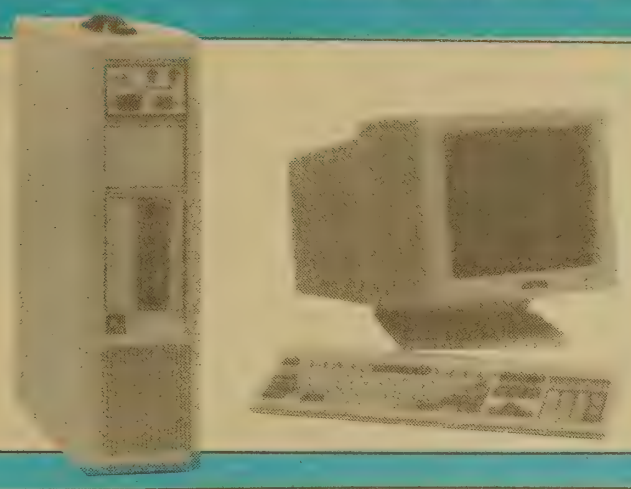

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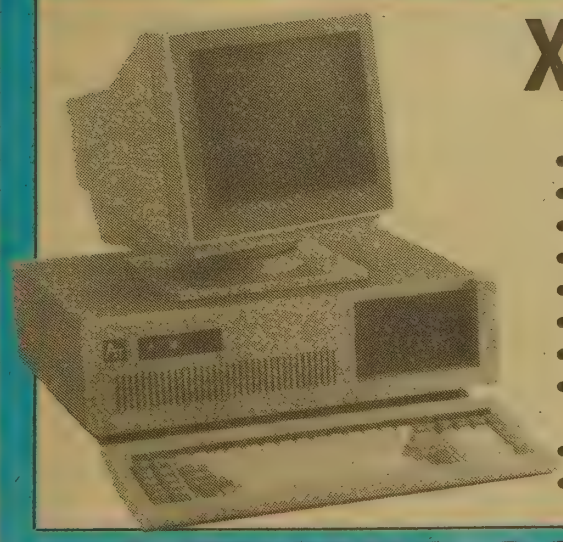

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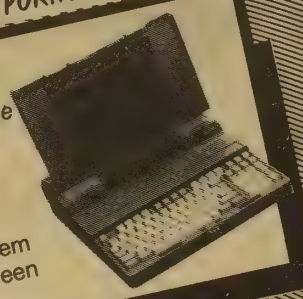

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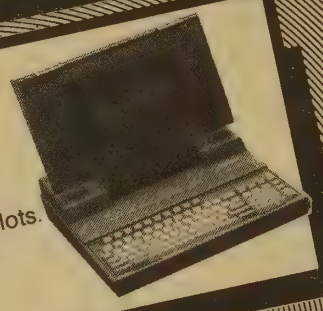

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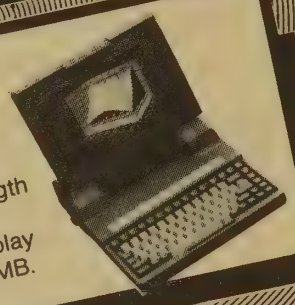

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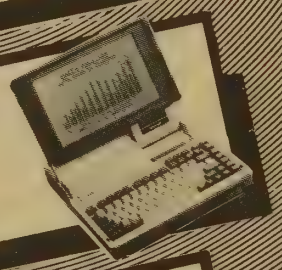

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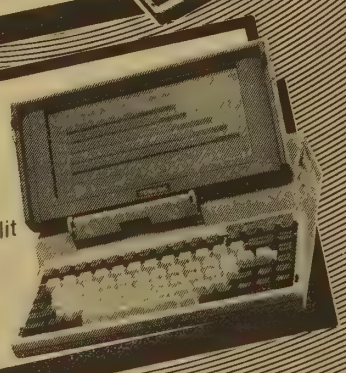

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The Consumer & Business Network. (818) 360-4679. 24 hrs., 1200/2400. Arc files, business and financial info, classified ads, discussion, Mac files, messages & mail, newsbytes, on-line store, real estate, USA Today, Westlink Report & HAM radio, PC Pursuitable. Sysop: Kenneth R. Wilcox.

The Ledge PC Board. (818) 352-3620. 300/1200/2400/9600. All systems welcome, full support for IBM PC/AT compatibles.

The "Other" Ball. (818)358-6968. N-8-1, 24 hrs., Adult love chat., str/gay dating database, IBM software, business files, PC-Pursuitable. Sysop: Michael Allen.

The Software Bank. (818) 993-5516. 300 to 9600. Atari ST only. 65 megs. Node #95 of FNET. Exchg. messages & files w/users on other FNET BBS nationwide thru our network. Sysop: The Software Bank..

TUG-NET (Technical & User Groups Network). (818) 882-6045. MS/DOS and CP/M supported. Voice: (818) 957-4721.

Valley On-line Shopping Network. (818) 772-4227. 300/1200 (soon to be 2400). Provides local businesses the opportunity of selling their products on-line to local and national computer consumers. Sysop: BRAINS.

VICUG-BBS. (818) 772-4227 N-8-1, 24 hrs., 300/1200/2400. See what is happening at VICUG (peakers, demos, newsletter, (VICUG-RAM), disk bank, desktop publishing sub group, etc. Sysop: Linda Rohrbough. Voice: Harry Tischler, (818) 997-6000.

Win Free Cash & Prizes. (818)908-9886, New BBS. Free to consumers. Everytime you call you can qualify for free cash & prizes. Voice: (818)908-9911.

900

Support, Inc. 1-900-860-HELP, 7 am–10 pm, Voice help with Macintosh problems. $2.00 for first minute, $1.00 for each successive minute. DOS help to be available soon. Sysop: Jeff Hellman.

916

24th Street Exchange. (916) 451-7179. 300/1200/2400 8-N-1 24 hrs. Opus-based system. Free access. Lge. selection pub. domain files for IBM & compatibles. Special interest areas. Sysop: Don Kuhwarth/Laura Stua.

Adult Contacts. (916)338-4909. 300/1200/2400. 24 hrs., Where mature adults meet to socialize and to exchange ideas & information. On-line matching games, files, info bulletins, messages, and lots of FUN! We especially cater to the new female user. No minors or technobabble allowed.

Changewinds HST. (916) 923-3862. 24 hrs., 300/1200/2400/9600. This system specializes in keeping the highest quality files online. TradeWars 1000 v9.03, 18 MHz system, many echomail conferences. Sysop: Ron Deaver.

CompuHelp. (916) 786-3923. 24 hr database-bulletin board system for the Blind and Visually Impaired. Sysop: National Association Of Blind And Visually Impaired Computer Users, Inc.

Dial-Your-Match. (916) 275-1265. Redding. (916) 736-0739. Sacramento.

Hackney's Hideout BBS. (916) 961-1042. 1200/2400 8-N-1. Includes AT&T users conference. Sysop: Rich Hackney.

Night-line Network Central. (916) 427-1107, 300/1200, 8:00 PM to 8:00 AM daily. Forum for individuals, clubs and organizations that want to network nationally with others. Sysop: Eric Thomas.

Phoenix Landing BBS. (916) 966-8243. 300/1200/2400. Macintosh oriented but many other computers are supported. File areas for Mac and other computers. Supports echomail conferences including ECHOMAC and BAYMAC.

ASSOCIATIONS

ACCPAC Accounting SIG. Meetings: 2nd Wednesdays at 7 pm. Users, CPAs, consultants, and other business people interested in sharing information on Computer Associates' ACCPAC Accounting software. Call Donna Miller, (213)393-0244.

California Educational Computing Consortium (CCCE). For information, write Herb Garrett, Long Beach City College, 4901 E. Carson ST., Long Beach, CA 90808.

Computer Professionals for Social Responsibility. Meetings: Most third Wednesdays, 7:30 pm, UCLA. CPSR/LS focuses on computer system risk and reliability and on privacy and civil liberties issues.

International Blind Users Group (I-BUG). Part of the National Association of Blind and Visually Impaired Computer Users. Membership consists of access to CompuHelp, a 24 hour online database/bulletin board system, and receiving CompuHelp On-Disk, a modem database bulletin board system on two double-sided disks. Call: (916)783-0364 or 645-8036.

LA Real-Time Problem Solvers. Meetings: 4th Saturdays, 10 am to 1 pm, Hawthorne Public Library, 12700 S Greviellea Ave.,, Hawthorne. We speak A/D, SBC, RISC, FORTH, and C. We support real-time, real-world hardware and software problem solving, such as firmware, device drivers, instrumentation and very smart toasters. Call: (213)371-0589.

North Orange County Computer Club (NOCCC). Meetings: Monthly on Sundays, Chapman College near downtown Orange. Help for beginners, SIGs, educational activities, monthly newsletter. Open to any computer user. Call: (714)998-8080.

Realtor Microcomputer UG (RUG). Meetings: 4th Thursdays, 7 pm, Pasadena BOR, corner of Orange Grove and Los Robles, Pasadena, CA.

USER GROUPS

AMIGA

Amiga Friends. Meetings: 3rd Sun. Rancho Santiago College, Rm R-124, 17th & Bristol, Santa Ana. Call for current meeting info: (714) 775-7237 (24 hrs.) or write: P.O. Box 4186, Huntington Beach, CA 92605.

Amiga Special Interest Group. Meetings: 1st Sunday except holidays. Chapman College, 333 N. Glassell, Orange, CA. Amiga SIG is part of the North Orange County Computer Club, a thousand member organization together 12 years.

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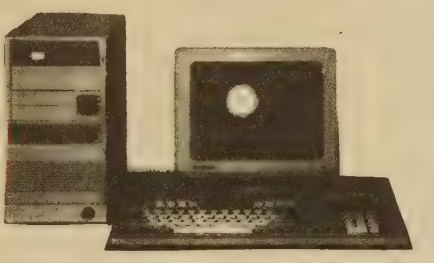

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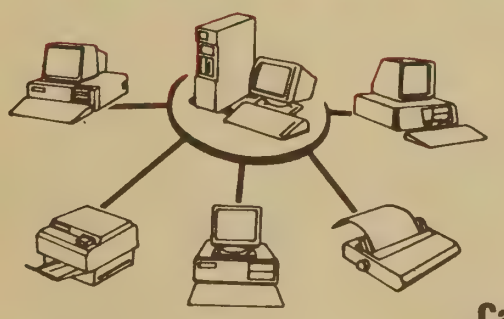

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Amiga User's Group Of Long Beach. Meetings: 3rd Sundays, 1 pm, Mid-Cities National Bank, Lakewood and Artesia, Bellflower. Tech, Beginners, Video/Graphics sigs. (213) 422-8226/432-2088.

Bits & Pieces Amiga Group of Anaheim. Meetings: each Tues. 6:30-10 PM 1130-A North Kraemer Blvd., Anaheim, CA. DOS Classes, tech. help & more. BBS: (714) 630-8897.

LAAUG-Los Angeles Amiga Users Group. Meeting: 3rd Wednesdays @ 7:30 PM. Veteran's Auditorium at Overland Ave. & Culver Blvd. Many SIGs, Rookie, music, video, monthly PD disks.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

San Fernando Valley Amiga Users Group (SFVAUG). Meetings: last Tuesdays 7 pm, The Meeting Place, 6507 Fallbrook Ave, Canoga Park. Call: Randy, (818) 719-9211.

South Bay Amiga Dudes. Meetings: 3rd Thursdays, 7 pm, Redondo Beach Blvd., Lawndale. Call: Charlie Breene at (213) 540-2834.

South Orange Commodore Klub (SOCK). Meetings: 3rd Saturday 9:00 A.M. Union Savings, 23688 El Toro Road, El Toro, CA. For Commodore 64/128 users and Amiga users. One-hour general meeting is followed by separate group meetings for each.

AMSTRAD

Amstrad Users Club Of Orange County. Meetings: 3rd Saturdays, 10 am til 2 pm. Board Room upstairs in the Santa Ana Library, Civic Center & Ross Streets. For more information call: (714) 953-6471.

Amstrad Users Group, USA. Meetings: Free mail and phone support for PCW. 12741 Matteson Ave. #3 LA 90066. (213) 397-7981.

APPLE

Apple/Valley Computer Club. Meetings: 2nd Wednesdays, 7:30 pm, Valley Presbyterian Hospital, meeting room #3. Discussion on Apple, Mac, Amiga, IBM. BBS: (818) 782-6471. Up loading/down loading. Visitors welcome. Eamon games, misc. Voice: (818) 988-1752.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

Tri-City Apple Users Group. Meetings: 3rd Thurs., 7:00 PM, 50 N. Hill Ave., Pasedena. Call (818) 846-6682. Friendly Apple II experts.

ATARI

Atari Computer Association Of Orange County. Meetings: 2nd Sun. Rancho Santiago College, Room W101, Santa Ana. BBS: (714) 540-7378.

North Orange County Computer Club Atari ST SIG. Meetings: First Sundays, Chapman College in Orange. (714) 552-5185, or Bill, 633-4665, or Mac, 751-3090.

Santa Clara Valley Atari Computer Enthusiasts (SCVACE). Meetings: 1st Thurs. 7PM Mint Canyon Moose Lodge, 18000 W. Sierra Hwy, Canyon County. 8-bit group. Atari ST special group now forming.

South Bay Atari Computer Enthusiasts (SBACE). Meetings: 2nd Tuesdays, 7:30 pm, Lomita VFW Hall, 1865 W. Lomita Blvd., Call: Alan, (213) 542-7870.

CLIPPER

Fresno Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: John Rogers, (209)251-7527.

Los Angeles Clipper User Group. Meeting: 4th Wednesdays, 7:30 pm. Call: Theresa Padilla, (213)452-0370.

Orange County Clipper User Group. Meeting: 4th Thursdays, 7:00 pm. Call: Steve Hilton, (714)847-7123.

San Diego Clipper User Group. Meeting: 4th Tuesdays, 7:30 pm. Call: Mick Keily, (619)569-8234.

Valley Clipper User Group. 7:30 pm. Call: Igor Lelchitsky, (818)716-8790.

COMMODORE

Bits & Pieces Commodore Computer Group of Anaheim. Meetings: each Tues 6:30 PM 1130-A N. Kraemer Blvd. (Kraemer & La Palma), Anaheim. Offers public domain software, demonstrations, interactive training on your computer. $33 annual dues.

Commodore 64 Software Users Group. For new Commodore owners. One on one help. Call (714) 531-2977 for info.

Commodore Helpers Of Long Beach. Meeting: 2nd Saturdays 9 am, Mercury Savings And Loan, 4140 Long Beach Blvd. Long Beach C-64 & C-128. Call: (213)424-0508.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays. Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4, C-16 & 128.

Nebula 6. Call BBS for more info & online glance at what group offers. BBS (714) 595-6577 300/1200/2400. Write for info: P.O. Box 1071, Walnut, CA 91788.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and CP/M operating systems.

Orange County Commodore Technical Users Group (C-TUG). Meetings: 4th Sun. 11:00 AM, 4th & Tustin, P.O. 1497, Costa Mesa, CA 92628. Newsletter; 2 BBS's; door prizes; demos, raffles, speakers, (714)750-3003.

Pacific Computer Club. Meetings: 2nd Thurs. 7 PM 391 S. Madison, Pasadena, CA.

Pasadena Commodore Computer Club. Meetings: 1st and 3rd Weds. 7:00 PM Circadian Room, Pasadena City College Cafeteria. Colorado Blvd & Hill, Pasadena. Call (818) 447-2212 after 2:30 PST or write P.O. Box 163, Arcadia, CA 91006. Supports C64 and 128 machines.

South Bay Commodore Users' Group. Meetings: 4th Tuesdays, 7:00 pm, Home Federal Savings Conference Room, 1670 Pacific Coast Highway, Redondo Beach.

South California Commodore Users Group. Meetings: 3rd Tuesday each month, 7:00 P.M., MidCities National Bank, Lakewood and Artesia Blvds., Bellflower, CA.

South Orange Commodore Klub (SOCK). Meetings: 1st Wed. 7 PM Laventhol & Horwath, Exec. Conf. Rm.7th Fl., 3699 Wilshire Blvd., LA, CA.

The Orange County Commodore Club. Meeting: 4th Saturdays, 11:00 am, Mercury Savings And Loan, Mercury Room, 7812 Edinger Ave., Huntington Beach, Call: Mike Moore at (714)968-6250, or Howard Phillips at (213)861-4165.

dBASE

UCLA PCUG dBASE SIG. Meetings: 3rd Wednesdays, 7:30 pm. Call: (213) 874-7471.

Valley West dBASE Users Group. Meetings: 3rd Mon. 7:00 PM Blue Cross Of California, 21555 Oxnard St., Woodland Hills. Call (818) 343-9033 or write P.O. Box 16971, Encino, CA 91416.

DEC

DECUS Rainbow Pacific PC-LUG. Meetings: 2nd Wed. 7:00 PM Digital Equipment Corporation, 6101 W. Centinela, Ave., Culver City. Digital Equipment Computer Users Society. Free to DEC users. Call Karen Danforth (818) 787-8736 or write P.O. Box 2278, Van Nuys, CA 91404.

DESKTOP PUBLISHING

VICUG–DTP. (Valley IBM/Compatibles Users Group). Meetings: 2nd Fridays, 7:30–10:00 pm. Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

EPSON

San Fernando Valley and Los Angeles Epson QX User Group. Meetings: 3rd Tues. 7 PM 6025 El Escorpion Rd., Woodland Hills. Call: (818)349-7417.

IBM AND COMPATIBLES

Calsonic PC Club. Meetings: 1st Tues. 5:15 PM 9 Holland, Irvine, CA.

Greater South Bay PC User's Group. Third Thursdays, @ 7 PM, Building behind Christ the King Lutheran Church, 2706 W. 182nd St. Torrance. Newsleter, BBS, more! Guests welcome. Call for more information. Evening: (213) 532-2123.

IBM & Compatibles Users Group-Ontario Area. For information call: (714) 982-1270.

Kenny's Computer Club. Meetings: Each Saturday 8:00 A.M. 1133 Locust St. Apt. 19, Long Beach, CA. For those with an interest in graphics, DTP, Lotus, Autocad, games, databases and word processing.

Kern Independent User Group. Meetings: Write Kern Independent PC User Group, P.O. Box 2780, Bakersfield, CA 93303.

Long Beach IBM Users Group. Meetings: 3rd Tuesdays. 7 PM, Woodruff Medical Plaza, 3816 Woodruff Ave., Room A, Long Beach. Contact: Jim Wells. Call: (213) 439-7114.

Mid-Wilshire PC User Group. Meeting: 2nd Thursdays, Conference Room of Forty Plus, 3450 Wilshire Boulevard, Suite 510, Los Angeles. Call: Robert, (818)790-5884.

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

Orange Coast IBM PC User Group. Meetings: last Sat. 9 AM Science Hall, Orange Coast College, Costa Mesa, CA.

Orange County IBM PC Users Group. Meetings: 2nd Thursdays 7:30 PM. Bradford Retirement Community Center, 1180 N. Bradford, Placentia. Meetings feature guest speakers on hardware and software topics related to the interest of our members. Other activities include sharing tips and problems, access to club library and a club newsletter. Call: Mike Lyons, 2114 W. La-Palma, Anaheim, CA 92801. (714) 774-3236.

Pacific Computer Club. Meetings: 2nd Thurs. 7PM 391 S. Madison, Pasadena, CA.

Pasadena IBM Users' Group. Meetings: 3rd. Wed. CalTech, Bridge Bldg., Rm. 201.

PC*UG Computer Club. For Hughes Aircraft Employees. Call (213) 334-3422.

QUICK & EASY Mailmaster User Forum. Meetings: monthly LA/Airport area. Users interested in maximizing performance of Quick & Easy.

Riverside IBM Club. Meeting: 1st Mondays, Riverside. Call: James Heidecke, (714)685-5407.

Saddleback College IBM-PC Users Group. Meetings: 3rd Sat. Room 210, Business and General Science Building, Saddleback College, Mission Viejo. Call Susan Gordon at (714) 582-4650.

South Bay Users Group (SBUG). Meetings: 1st Sun. Mercury Savings, Long Beach, CA.

South County PC Users Group. Meetings: 3rd Sat. 9 AM Great American Savings, 23688 El Toro Rd., El Toro, CA.

Technical Users Group (TUG-NET). Meetings: Call for info (818) 882-6045. BBS (818) 882-6045.

The IBM & Compatibles User Group (ICUG). Meetings: 4th Thurs. 6:30 PM or 7:30 CAL Lutheran Univ., 60 W. Olsen Rd., Thousand Oaks. Group is 5 yrs. old & has 150 members Meetings begin at 6:30 for beginners, 7:30 regular members.

The Southern California K-Man Users Group. Meetings: 1st Wednesday, 7:00 P.M., Laventhol and Horwath, Executive Conference Room, 7th Floor, 3699 Wilshire Blvd., LA. Demo of the month features new software and hardware.

TRS Nybblers. Meetings: 1st Wed. 7 PM 2006 W. Magnolia, Burbank. Supports MS-DOS, CP/M, IBM or IBM clones.

UCLA PC Users Group. Meetings: 2nd Tuesdays, 7 pm, Neuro Psychiatric Institute, Level C Auditorium, UCLA campus. Call: (213)650-4700.

Valley Computer Club—IBM. Meetings: 1st Wednesdays, 7 pm, Burbank Bd. of Realtors Bldg., 2006 W. Mangolia, Burbank. Call: Wes Arnold, (213) 221-4433.

VICUG (Valley IBM/Compatible Users Group). Meetings: 4th Fridays, 7:30 pm, Mercury Savings Bank, 14801 Ventura Blvd., Sherman Oaks. Call: Harry Tischler, (818) 997-6000.

VICUG–DTP (Valley IBM/Compatibles Users Group). Meetings: 7:30–10:00 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. Call: Harry Tischler, (818) 997-6000.

KAYPRO

OKOK Computer Users Group. Meetings: 2nd Wed. 7-9 PM Altadena Public Library, 600 E. Mariposa. Call (818) 794-3243. Serves, Osborne, Kaypro, Commodore C128, PCs and compatibles and both MS-DOS and C/PM operating systems.

LEADING EDGE

Leading Edge Computer User Group of Ventura County. Meetings: 2nd. Sat. 10 AM Camarillo Library, 3100 Ponderosa Dr., Camarillo, CA. Lectures on hard/floppy disk usage; program demos; beginner classes. Single: $20, couple $25.

MACINTOSH

APX, Inc. An national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408)745-0665. Write to: Mike Bailey, APX, 370 Altair, PO 175, Sunnyvale, CA 94086.

California State University Macintosh Users Group. Meetings: California State University, Long Beach.

Conjo Ventura Macintosh Users Group, Inc. Meetings: 1st Thursdays, Thousand Oaks Public Library, 1401 E. Janss Road, Thousand Oaks. Call: Ed or Ellie Darling at (805) 584-8733.

LAMG (Los Angeles Macintosh Group). Meetings: Call (213) 278-LAMG or write 12021 Wilshire Blvd. #349, Los Angeles, CA 90025.

MacValley. Meetings: 3rd Tues. 7:30 PM Burbank High School Cafeteria at Burbank Blvd. and Third St. Call David Lagerson, (818) 998-5546or write P.O. Box 4279, Burbank, CA 91503.

Moreno Valley Macintosh Users Group (MVMUG). Product demos, newsletter, SIGS, BBS, more! For information about the club and meeting call: (714) 684-1337.

Original Apple Corps. Meetings: 2nd Sun. 12:00 Noon 3rd Floor Community Room, Santa Monica Mall. First Apple group ever. SIGs for AppleWorks, Telecomm, Educators, Macintosh. Call Fred Duffy at (213) 396-5515.

San Gabriel Valley Macintosh Users Group. Meetings: 1st Thursdays, 7:30 pm, Pasadena City Library, 285 E. Walnut. (213) 684-4266.

SBAMUG (South Bay Apple Mac User Group) Meetings: Last Wednesday of each month, 7:30 PM, Ticor Title, 4240 Artesia Blvd., Torrance. Call (213) 316-7738.

Santa Barbara Macintosh Users Group. Meetings: First Tuesdays, @ 7 PM, Goleta Library. Publishes a newsletter with reviews, offers advice, support for Mac users, discounts at local dealers. Call: Morris Herman, 987-5511, x 2083.

West Orange County Macintosh Users Group (WOCMUG). Meetings: Last Tuesday. F & M Bank in Rossmore Center, Orange County, CA.

Whittier Area Mac Users Group. Meetings: 2nd Saturdays, 10 am, Granada Heights Friends Church, 11818 S. La Mirada Blvd., Rm. C-21. (213) 691-1622.

NETWARE

Orange County Network Users Group (OCNET). Meetings: 2nd Tues. Wyle Labs, Irvine CA. Open to users, consultants, all interested in NETWARE. Call Mark at (714) 955-0616.

Netware User Group Los Angeles (LOSNET). Meetings: 2nd. Wednesdays. Welcomes consultants, CPA's, dealers and users interested in sharing information on NETWARE and related products. Call Fane, (213) 452-1335. 2716 Ocean Park Blvd, Santa Monica 90405.

OPEN SYSTEMS

Open Systems Accounting, So. Cal Users Group (OSASCUG). Meetings: 4th Wed. Wyle Labs, Irvine, CA. Users of Open Systems, Altos Accountant, CADO, & Rexon accounting software. Open to end users, dealers and consultants. Call Mark at (714) 955-1724.

OSAS Systems Users Group Los Angeles (OSASUGLA). Meetings: 1st Wednesdays. Welcomes consultants, CPA's, dealers, users and QI's inter-

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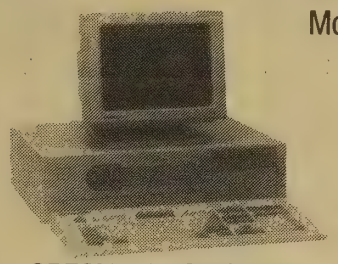

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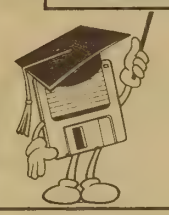

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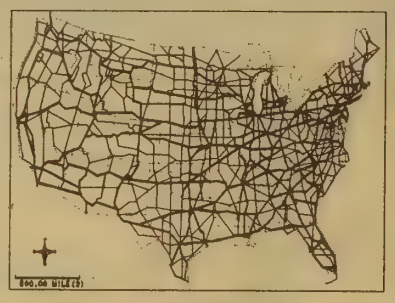

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can have voice mail going back and forth—multimedia mail, essentially. And hopefully, things will be a little bit more standardized.

The way companies usually work is that they will normally choose one type of personal computer to adopt...

That's the way they have worked in the past. But see, that's becoming less important. The focus is shifting—from our experience—into standardizing on how the networks are done. And what the person has on their desk could be a Macintosh or a high-end PC, or a Sun, or a NeXT. For example, in our company, what's on a person's desk—we have people with Suns, people with NeXT machines, people with various PCs—most of all of whom are in engineering where there are specialized programs that run on those machines. But then they're on the net. What's important is that the building be wired with a network that supports multiple machine types, and that's where things are shifting.

I think Businessland is aware of this shift and is following it a bit in that they're saying, "Well, we're going to focus on systems, and on connecting these things together, and the customer can choose whatever mix of workstations actually sit on their desks."

Will you be distributing things on floptical disks as well?

Since we intrinsically do things in a network environment, the way our software is typically used at a customer site is that they may have a multi-thousand node network, and they'll get one disk that they can, from their desks, distribute that to all the machines out there. The old way of distributing software is starting to change as networks get better, as they get standardized, as software starts to come on multiple disks.

A lot of people will say of the NeXT, "Oh, it's terrible—it doesn't have a floppy drive." But we don't necessarily see that as a problem, because the way that software will actually be sold is, the high-end type of dealer like Businessland will set up the whole thing—all the software loaded, configured and set up—back at their corporate center, which is on the network. Then they'll give it to the customer already configured, and they just turn it on.

But of more interest to us is CD-ROM-type drives, where the way a computer should come to you....This is where we're a little bit disappointed in Apple. What we would like to see out of Apple is a CD-ROM drive standard in the Macintosh. So you know that you can distribute something that has 500 Mb of storage, can be mass produced at very low cost with good reliability.

We would like to distribute all our products on CD-ROM and not on floppy drives of any sort. I mean, people don't write onto their master copies of their disks anyway, so it doesn't have to be on read/write media. What we would like to see—or what you should be able to do with ScreenRecorder/MacRecorder and those things—you should be able to get your computer, pull it out of the box, turn on the switch, and it should come on and say, verbally and with animation, "Welcome to this new Macintosh. Let me show you a few of the things you can do do with it. You can do spreadsheets—look how they work. You can do work processing—look how that's done. You can do desktop publishing..." and so on. And then it could say, "Would you like to learn more about any of these?" And you can tell it which ones you want to do. And that's all on the distribution disk—there's no paper documentation at all.

When the Macintosh first came out, they had that advertisement where they dropped the binders next to the IBM PC and it bounced. Now the Macintosh binders are pretty big. It would be nice to think about—well, you drop the CD-ROM disk next to whatever machine, and it doesn't bounce at all.

But by moving to fully narrated, fully animated, online help including tutorials—if you have that front-ended onto something like Microsoft *Excel*, instead of getting help and having some cryptic paragraph on such-and-such, you could have a little button there that says "Tutorial" that shows you how to make the graph instead of having to explain it to you. The only way you can do that economically is if the machines have CD-ROM drives built i, and are released as more-or-less standard equipment. And for a floptical drive, it's $80 for the raw media, where a CD-ROM is like $2. So there's just no comparison.

You started as a sort-of grassroots effort. Do you think it's still possible to grow a company that way?

Sure. Although it's hard to get into the distribution channels. I mean, the very hardest thing that we have done, or the thing that we have of most value, is our distribution channels. We work very hard to support them and maintain them, and it's very difficult to get that started. It's a painful process. But if you have a good thing at the right time, the distribution channels are hungry for good things at the right time, and they'll pick stuff up. ■

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286 TURBO PERFORMANCE SYSTEM

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- 200W Power Supply (Super Quiet)
- Hard Disk & Floppy Disk Controller
- One 1.2MB (Teac) DS/HD Drive
- Monographics card with printer port
- Acer '102' Keys Enhanced Keyboard
- Clock/calendar with battery
- Assembled, tested and 48 hours burn-in

20 MB YES!

SYSTEM PRICE: **$1095**

OPTIONS:

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386 SCIENTIFIC WORKSTATION

64 MB YES!

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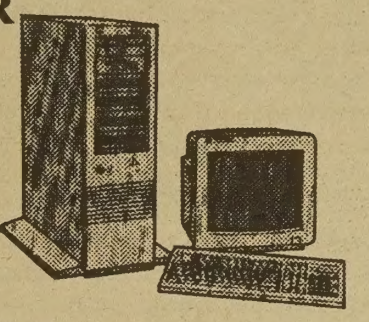

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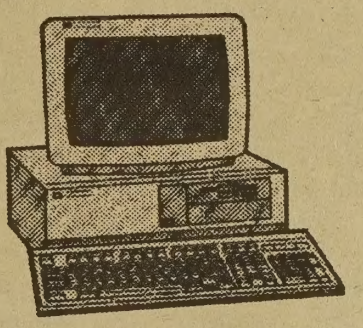
* 8 & 12 Mhz speed
* VGA color adapter
* VGA COLOR monitor



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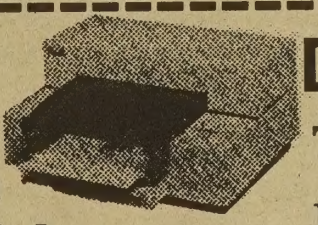

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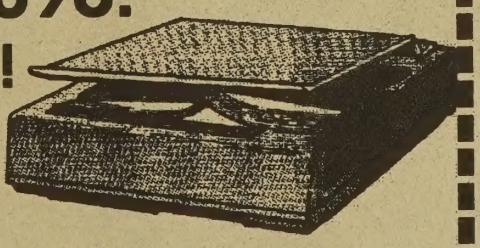

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Dvorak's Definitive Lists

Every Name For IBM You Could Ever Imagine (ALMOST!)

Some years ago I asked the readers of my Inside Track column (now appearing in *PC Magazine* at a newsstand near you) to send me their interpretation of the letters I.B.M.—what does IBM really mean? I cited the funniest ones, but I never published the complete list for posterity. The typesetters will hate me for this, but here is every iteration of IBM known to man. (Cut and save!)

Ideas	Bring	Money
Insidious	Byzantine	Mentality
Intergalactic	Bottomline	Mistake
Inevitably	Bad	Marketing
Indecision	Breeds	Mistakes
Inshallah	Burak	Ma'lesh
Imensa	Bola De	Manteca
Iconoclastic	Bilateral	Monopoly
Incontinent	Bandolerismo	Moloch
Imperial	Bellicose	Marauder
Impious	Bacchanalian	Metropolis
I'd	Buy	Macintosh
Imbecilic	Bad	Micros
Imperialism	By	Marketing
Intensely	Boring	Machines
Interesting	But	Mundane
Internals	By	Mediocrity
Into	Building	Money
Industry's	Bungling	Monolith
Irresponsibly	Behaved	Multinational
Increasingly	Bad	Manufacturing
Insipidly	Bankrolling	Millions
Inconsistent	Business	Machines
Innovation	By	Management
Industry	Bowel	Movement
I'm	Being	Manipulated
International	Brotherhood	Magicians
Intercourse	Beats	Masturbation
Incredibly	Bloody	Minded
Incredibly	Ballsey	Marketeers
Intentionally	Braindamaged	Machinery
Idealistically	Backward	Microcomputers
Idle	Brain	Malfunction
Imitable	Boring	Microcomputers
Impeccably	Blue-dressed	Managers
Itty	Bitty	Machines
International	Bowel	Movement
I	Bring	Manuals
I've	Been	Misled
Ifs	Buts	Maybes
It's	Better	'morrow
Incompatible	Blue	Machines
Indigestion	Bothers	Me
Intersmashable	Byte	Manipulators
Icons	Bygones	My Mom's
It	Breaks	Monthly
Infinitely	Baffling	Motives
I'm	Buying	Macintosh
It's	Better	Manually
Imitation	Burroughs	Machine
Incredibly	Big	Monster
Itty	Bitty	Mentality
Incredible	Bowel	Movement
I've	Been	Mesmerized
Insignificant	Bothersome	Machines
Its	Broke	Ma'am
In	Business(for)	Money
International	Bit	Mangler
Increasingly	Banal	Management
Infernal	Blue	Machine
Insultingly	Boring	Microcomputers
Ill-mannered	Besotted	Macrocosm
Immeasurable	Bigheaded	Malapert
Impersonal	Bellicose	Magnate
Insolent	Bickering	Mal-der-mer
Indecorous	Big-named	Medusoid
Inept	Bullying	Menace
Incredibly	Boastful	Mercenary
Immovable	Brash	Monolith
Inferior	Before	Macintosh
Ici	Beaucoup	Merde
I'm	Beyond	Mistakes
I've	Been	Mangled
Inherently	By	Microsoft
Incredibly	Bad	Manuals
I'll	Buy	Macintosh
It's	Beyond	Monolithic
Install	Bigger	Memory
Infernal	Biggest	Mistake
Incredibly	Broad	Monopoly
Intriguingly	Blue	Motif
Incredibly	Bad	Merchandising
It's	Bugging	Me
Itty	Bitty	Mouse
I	Bring	Madness
Incredibly	Big	Manufacturer
Industry's	Biggest	Mistake
I	Built	Mine
I	Broke	Mine
Idiots	Being	Mental
I've	Been	Mauled
Invented	By	Maladroits
Invented	By	Marketing
Insulting	Boorish	Manner
Inane	Brutish	Merchandising
Infinite	Budget	Merchandising
It's	Bullshit	Mummery
It's	Become	Monolithic
Inadequates	Becoming	Millionaires
I'd	Be	Misinforming
Idiots	Became	Managers
Incredibly	Boring	Manuals
Incredibly	Belligerent	Marketing
Interesting	But	Mediocre
Invented	By	Murphy
Insanely	Better	Marketing
Illustrious	Busy	Mice
Itty	Bitty	Maharishi
It's	Been	Malfunctioning
Ill-manners	Being	Mandatory
It	Broke	Me
Illustrious	Bankruptcy	Malefactor
Insensitivity	Begets	Mediocrity
I've	Become	Magnanimous
I	Blame	Mathematics
Internal	Byte	Malfunction
Intellectually	Blessed	Marketers
Instant	Black	Market
IBMers	Bug	Me
Indestructible	Blue	Monster
Incredibly	Big	Money
Indisposed,	Back	Monday
I	Believe(in)	Money
Industry	Bully	Magnifique
Incredibly	Boring	Machines
Infoworld's	Best	Moneymaker
International	Business	Manipulators
Industry's	Big	Mama
Intel's	Best	Merchandiser
Innovation?	Bah!!	Marketing!
I've	Been	Megamarketed
Industry's	Being	Megamarketed
International	Business	Machines
Imitation	Burroughs	Machines
Improved	Burroughs	Machinery
Inferior	Business	Machines
Immensely	Bland	Mercenaries
Imprudent	Boorish	Mob
Imperfect	Bombastic	Moneymakers
Infamous	Bizarre	Monsters
Inhuman	Babbling	Madmen
Ignorant	Baffling	Majority
Illusive	Bewildering	Mystics
Identical	Belligerent	Myths
Imperishable	Brutal	Manure
Insipid	Barbaric	Magicians
Itsy	Bitsy	Monopoly
Intentionally	Been	Manipulated
I	Buy	More

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine *and* MacUser, *considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

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